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## TARO VARIETIES IN AMERICAN SAMOA

Ken Wai Ching & Vaiau Togiva

Edited by Penny Levin

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Cover: Talo Magaulusina. Ken Ching, American Samoa, ca. 1968.

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# PREFACE

Taro, or talo in Samoan, is one of the core staple starch crops of the Samoan island group and throughout the Pacific. As with much of the region, many of the traditional varieties of taro have all but disappeared with the introduction of hybrid cultivars, yet still persist in remote gardens here and there. Many of these cultivars were brought to Hawai‘i by various collectors and researchers beginning in the 1920s with Geritt Wilder, David Yen in the 1950s, Ken Ching, James Pang, and several others in the 1960s through the end of 20th century. These taros, easily confused with Hawai‘i’s own set of unique varieties, were seldom, if ever, described in a manner that allowed for cultivar identification.

Ken Wai Ching’s interest in taro began in 1963 as an undergraduate at the University of Hawai‘i at Mānoa where he first met Don Anderson, who maintained an extensive taro collection from Hawai‘i and the Pacific at the Harold L. Lyon Arboretum in Mānoa, O‘ahu. As a Master’s student in Horticulture, his advisor was Makato Takahashi, one of the authors of *Bishop Museum Bulletin* 84*: Taro Varieties in Hawaii* (Whitney, Bowers & Takahashi 1939). His fascination with taro continued during his years as an agriculture agent in Kosrae, Samoa, and Guam, and later as an APHIS Inspector for the state of Hawai‘i. While stationed in American Samoa from 1968 to 1970, Ken took the opportunity to observe local taro varieties. Working with colleagues and friends, including Vaiau Togiva, Agriculturalist at the Department of Agriculture, and the limited resources available to them at the time, they collected taro varieties from across the islands of American Samoa which helped to expand the initial taro collection established there by George Arakawa, from Hawai‘i Island, who began collecting in the 1950s. This collection was the source of materials for other researchers in the early 1970s who attempted to describe and differentiate the cultivars (Merrick & Togiva ca.1975)[1] or were interested in developing new varieties, particularly at the Department of Agriculture, American Samoa and the University of Hawai‘i. Ching and Togiva observed the situational variation in growth and developed an identification guide that eliminated unreliable descriptors while still using the template provided by *Bulletin* 84. The original hand-typed manuscript, along with photographs and slides, has lain unpublished for many years. That text, and any images that could be salvaged, form the body of this current publication.

In the pattern of the original *Bulletin* 84, the book describes the methodology taken to create descriptions for each taro variety, provides a taxonomic key for quick reference, and presents each of the 37 cultivars from the American Samoan taro collection in further detail. Where additional information was available from other sources, they have been included in the varietal descriptions, bringing together the notations of Christophersen (1935) and Merrick & Togiva (n.d., ca.1975) with those of Ching. While not always concurring, they add to the discussion and provoke further research into clarifying Samoan taro identities.

Lacking the archival record of oral and written historical documents or images such as those found in Hawai‘i, we have little knowledge of how many taro varieties once populated the islands of Samoa. Christophersen (1935) documented that at least 59 Samoan taro names were known in the early 1900s and described or provided small bits of information for 22 cultivars, suggesting taro diversity exceeded what was still present in 1968, after which the number of taro varieties appears to have declined even further. It is fair to say that the substantial replacement of these important traditional cultivars with hybrids since the 1990s has been the single most influential reason for their almost complete disappearance, and the loss of identification skills and knowledge associated with them. The publication of this manuscript represents the first formal key to identification of the taro cultivars grown in American Samoa some sixty years ago and that may still be extant in American

[1] Following his work with Ching, Togiva gathered a second taro collection with Merrick, in which 30 varieties were planted at the Taputimu agriculture station in December 1974 for observation. This produced descriptions for 31 cultivars. No record survives to determine whether this later collection drew from the original Arakawa-Ching plantings or was drawn from farmers’ fields before transfer to Taputimu.

Samoa, Samoa, and Hawai‘i. The book should prove useful for taro growers and agriculture agents in American Samoa interested in cultivar recovery, as well as to those in Hawai‘i seeking to distinguish between Samoan and Hawaiian taro varieties. As awareness of indigenous crop cultivar diversity in the Pacific grows among today's younger generations interested in reconnecting to their own cultural and agricultural traditions, *Taro Varieties in American Samoa* should prove both needed and timely. *—Penny Levin, Editor*

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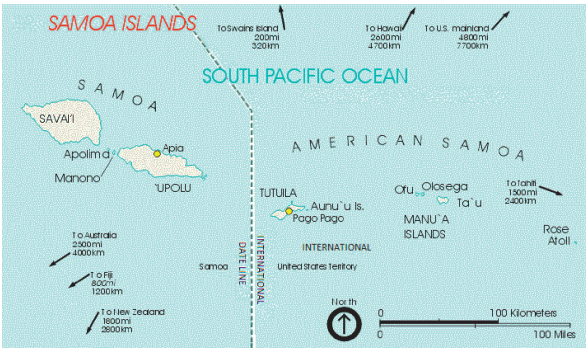


**Fig. 1**. Map Source: US National Park Service circa 2002 - US National Park Service. Public Domain: https://commons.wikimedia.org/w/index.php?curid=2721726.

# INTRODUCTION

The taro cultivars described in this publication are from the George Arakawa collection of Samoan taro varieties. The collection, while no longer in existence, was the property of the Department of Agriculture of American Samoa and was assembled under its auspices. Mr. Arakawa was employed by the Department as its Agriculturalist and assembled the collection for the purposes of crop improvement of the country's agriculture economy, preservation of endangered cultivars, and as germplasm for future study of *Colocasia esculenta* by countries where it is an economically significant crop.

The George Arakawa collection, situated on the Taputimu Demonstration Farm, was established in 1966 by Mr. Arakawa, who was then succeeded by Mr. Ken Wai Ching as Agriculturalist in 1968. Mr. Ching continued the work of field collection, making additions that brought the number of taro cultivars in the collection to 37 varieties. Plants were gathered from the Manu'a island group comprising of three islands (Ofu, Olosega, and Ta'u), Aunu'u, and Tutuila, the largest of the islands and the seat of government for American Samoa (see Fig. 1). The islands of Savai'i, Apolima, Manono, and 'Upolu, which make up Samoa, were not surveyed.

To ensure preservation of the cultivar collection, plant material was sent to the Harold Lyon Arboretum in March of 1970 as an addition to its existing Pacific taro collection. The Arboretum is a research facility covering 124 acres [approx. 50 ha] in Mānoa valley in Honolulu on the island of O'ahu, Hawai'i, managed by the University of Hawai'i. At the time, the facility maintained inventoried collections of exotic trees and shrubs, as well as a taro collection which held cultivars from Hawai'i, India, Timor, New Guinea, Solomon Islands, New Caledonia, Tonga, Western Samoa, Fiji, Easter Island, Marquesas Islands, New Zealand, Japan, and China.[2] The presence of the Samoan taro collection at the Arboretum was instrumental in construction of the key and its review. The draft manuscript was developed in American Samoa and completed in Hawai'i.

**Fig. 2** (left). The taro collection of varieties from the Pacific on the grounds of the Harold Lyon Arboretum, Honolulu, Hawai'i, 1970. **Fig. 3** (right). Two rare Hawaiian taro varieties in the Harold Lyon Arboretum collection, Uahiapele in the foreground and Elepaio, a variegated variety

While the text is written mostly in the present tense, the reader is cautioned to remember that it refers to a time period almost 50 years past. Although somewhat faded, the photographs have not been adjusted so as not to misinterpret original colors.[3] Any errors or omissions belong to the authors.

[2] These early collections were obtained primarily from Douglas Yen, who collected taro from a broad sweep of the Pacific and Asia in the 1950s, and were managed by Don Anderson. In the late 1980s, the Lyon Arboretum taro collection suffered extensive feral pig damage and most of this, along with much of the Hawaiian taro collection, was lost. It now only holds a limited number of Hawaiian cultivars on its grounds.

[3] Correcting for greens in the images skewed reds and purples. Just four of the images were slides and retained their color. The opportunity may still exist to recollect and rephotograph these taro varieties to improve the descriptions.

## TARO IN AMERICAN SAMOA

Taro, or *talo* in Samoan, is a staple with banana or plantain, and breadfruit in the diet of the people of the island group. All parts of the plant (leaves, stems, corm) are used for food. Some taro cultivars have medicinal uses and others serve a ceremonial function in the form of specially prepared food as a token of patronage, such as the variety, Faifa‘ausi, which is the primary ingredient in a taro and coconut cream dish called *fa‘ausi*. *Fa‘ausi* requires more time to prepare than ordinary family fare and therefore is seldom found in daily meals except to honor someone of rank.

In American Samoa, taro production is carried out on all available flat land and hillsides. On Tutuila, the largest island of the group, taro may be found growing on hillsides with slopes greater than 45 degrees and heavily mulched to control erosion and weeds. In the marshes of Aunu‘u, taro is found growing on raised islands bounded by canals and again heavily mulched with coconut fronds, as they have been for centuries. The traditional cultural practices of planting with an oso, Samoan digging stick, as well as alternately fallowing plots, is still practiced today by subsistence farmers alongside commercial growers, and on hillsides and valleys inaccessible by roads. The use of mechanical land preparation, fertilizers, and chemical pest control on commercial farms was strongly entrenched by the 1970s and continues today. That trend was the result of an agricultural development program initiated by the U.S. Department of Agriculture in 1963 which provided incentives for the adoption of the new techniques by offering planting material, agriculture chemicals and equipment, land preparation, and a small equipment rental service at an encouraging low cost to farmers.

A total of 37 cultivars were assembled for the Samoan taro collection in 1968, although only a few were found in large numbers in both commercial fields and home gardens. The three most common varieties at the time — Talo Niue, Talo Manu‘a, and Magaulusina — were selected by farmers for their disease resistance, yield, and flavor.

The people of Samoa categorized and named plants and animals in their surroundings using keen observation skills. In the taro, they separated varieties into groups based on their similarities and differences and named them based on their place of origin, morphological features such as petiole (stem) color, or the taste of the corms when cooked. An instinctive binomial system emerged where taro varieties that formed a group received a group name, followed by a secondary name that distinguished each member within the group from each other.[4] Cultivars that did not belong to a group received only a single name. For example, the group Vaevaeula is composed of two members, V. pa‘epa‘e and V. uliuli. Vaevaeula refers to the color combination and pattern of the petiole, which resembles the color pattern of the feet of the Pacific spiny lobster, *Panuluris japonicus*. Vaevaeula pa‘epa‘e and V. uliuli are separated by the degree of color intensity; *pa‘epa‘e* implying that the petiole color is lighter than *uliuli*, which is darker. Talo Fiti does not belong to a group and its single name derives from its place of origin in Fiji, or *Fiti* in Samoan. Several taro cultivars with Niue in their name are found in the collection and originate from the island nation of Niue. They are recognized in American Samoa for their taste and productivity.

The word, *talo*, is used before the names of some cultivars to indicate that the Samoan speaker is referring to taro when it cannot be discerned from context. Therefore, when a variety is asked to be identified and, for example, Talo Manu‘a is given in reply, Manu‘a is its name, not Talo Manu‘a, and identifies it as from the islands of Manu‘a.

[4] This plant identification pattern is found among many indigenous communities and is not dissimilar from current patterns in taxonomy. Taro grouping and naming in Hawai‘i reflects this practice, as well (Konanui & Levin, in prep.).

## METHODOLOGY FOR DESCRIBING THE CULTIVARS

Flowers, traditionally a key element in identifying a genus and distinguishing species in plants, were rarely observed by researchers who studied taro, although are well-known to farmers. While the myth that "taro rarely flowers" has been dispelled (Konanui & Levin, in prep.), it remains a poor characteristic for identification at the varietal level. Vegetative characteristics, therefore, are used to describe the cultivars and to construct the taxonomic key. Many quantitative morphological features such as petiole length, leaf area, number of cormels, root length, leaf number, and plant height are unstable and subject to variation by plant age, soil fertility, pH, moisture, sunlight, and locality. The color of the petioles and its patterns are also subject to these factors to some degree, but appear to be far more stable across time for identification, as confirmed in Hawaiian taro, and is a distinctive characteristic for differentiating between taro varieties.

Most Samoan cultivars demonstrate little to no variation in such characteristics, with high variability in just a few cases. Petiole color is peculiar to the cultivar in question, and therefore, in this sense is stable and suitable for use in identification. Other vegetative characteristics along with petiole color and pattern that were recorded to describe the Samoan cultivars were:

- *leaf characteristics* – shape, color of the sinus line, color of the leaf margin, color of the piko, and any additional outstanding features;
- *petiole characteristics* – color pattern, color of the base line (where the petiole joins the corm), color of the band (area above the base line), apex (the top of the petiole) and petiole sinus margin;
- *corm characteristics* – color of the skin, roots, flesh and fibers, and whether it had single or branching corms.

To insure continuity in all the features described, each cultivar was compared against a minimum of six specimens grown together under identical conditions. Furthermore, all descriptions in the key and the text on which the key is based were from cultivars four to six months in age. The minimum age criterion was based on observations among the Samoan cultivars that petiole color and pattern stabilized after four months, and hence, could then be relied upon for accurate descriptions and identifications. The exception to this was some observations related to leaf characteristics (lobes, sinus shape, leaf undulations, plant stature, and remarks on side shoot production) which were determined from a limited number of photographs at a later date.

The effect of locality was also taken into consideration. The description of each cultivar was again compared to specimens taken from the same stock to observe variations when the collection was moved to three different sites. The first two were established at different locations within the Taputimu Demonstration Farm of the Department of Agriculture of American Samoa.[5] The third site where the varieties were grown and observed was at the Harold Lyon Arboretum taro collection managed by Don Anderson, in Honolulu on the island of Oʻahu, Hawaiʻi. Changes encountered due to shifting locality were primarily in the appearance or disappearance of colors and a shift in color intensities of the petiole and leaf. These deviations were considered during the preparation of the key and are reported in the descriptions.

The descriptions of each cultivar in the text are divided into convenient sections for quick reference to a plant part (see Figs. 45–49 in the glossary). More detailed information on the petiole color and pattern for each variety is also included following a basic pattern beginning from the base of the petiole (base line) and moving upwards to the apex and the leaf, and describing the color pattern and shifting hues. Attention is given to the appearance or absence of a purple sector on the ventral petiole surface at the apex near the leaf blade. This particular characteristic is valuable in identifying Samoan taro cultivars.

[5] The Taputimu Demonstration Farm was closed in 1975 due to drought and a lack of resources to maintain the farm, and then was transferred, along with the Department of Agriculture, to the American Samoa Community College (Mark 1982).

A particular leaf characteristic is the piko, Hawaiian for navel, and it is the point on the upper leaf surface reflective of where the petiole joins the leaf on the underside. The size of the piko color spot, its color, and radiation from the piko is an important feature in distinguishing between near identical cultivars. Piko color radiation is only described where such radiation is prominent, e.g. the cultivar, Lauila (No. 9).

All 37 cultivars were observed to have incomplete sinuses (i.e., the sinus cut does not extend to the piko of the leaf). This common leaf characteristic was not eliminated from the descriptions because of the possibility of finding a variety with a complete leaf sinus in future field collections. At this time, such examples are found only among the Piko group

**Fig. 4**. Piko ʻulaʻula, a Hawaiian variety with leaves exhibiting a complete sinus. (Picture taken at the Harold Lyon Arboretum taro collection, Honolulu, 1970).

of Hawaiian taro cultivars (see Fig. 4), of which seven varieties remain. Description of depth or width of a leaf sinus and the shape of leaf lobes were described at a later date than field observations made for the original manuscript and had to rely solely on photographs. Due to the age, quality, and limited number of images, this was not discernable for all cultivars and accounts for their lack of description in some varieties.

Three sources were consulted to evaluate the meaning of Samoan cultivar names and their relationship to morphological characteristics, including the *Samoan Dictionary: English and Samoan, and Samoan and English; with a Short Grammar of the Samoan Dialect* (Prath 1862), *Samoan Dictionary: Samoan-English, English-Samoan* (Milner 1994), and the translations of Mr. Ponifasio (Tony) Lilomaiava. In addition to dictionary sources, Merrick & Togiva (n.d., ca.1975), Christophersen (1935) and Taotua (1993) were resources for the various spellings of taro names and potential synonyms.

The reader should bear in mind that the descriptions are based upon a mean observation over a minimum of six samples with a minimum age of four months to maintain consistency in sampling, and must overlook naturally occurring biological variation (somatic mutations and epigenetic differences).

# KEY TO THE TARO CULTIVARS OF AMERICAN SAMOA

To facilitate identification, the cultivars in the key were divided into five categories based on petiole color; and a separate and concise key was developed for each. For the convenience of the investigator, some cultivars were repeated in two categories where it was thought that the variety could be placed in either one, e.g., A‘ali‘i and Fa‘aele‘ele. The cultivar names in the key are those most commonly used in American Samoa for each variety. All synonyms are included in parentheses on the individual variety description pages. No attempt was made to change names or to separate members from groups as determined by the Samoan language.

The key and the method of describing the cultivars here is admittedly open to criticism, but is believed to be an improvement over other lists and keys of taro which have been either scant of detail or considered unwieldy with quantitative characteristics that were highly variable and unstable points of identification.

**I**. **Petioles predominantly green**.

1. Petioles green to dark green.
    2. Petioles with brown or purple infusions on green background.
        3. Purple sector on ventral surface of petiole apex.
            4. Corm skin white, flesh white or orange with yellow fibers.
                5. Corm flesh white.
                    6. Leaf scars on corm purple ..... **(1) Vevela**
                    6. Leaf scars on corm not purple..... **(2) Manu‘a pa‘epa‘e**
                5. Corm flesh orange ..... **(3) A‘anosamasama talo Niue**
            4. Corm skin pink, flesh white with yellow fibers.
                7. Petiole base line pink; piko purple, large ..... **(4) Niue**
                7. Petiole base line red; piko purplish red and limited to central point where primary veins of lobes join **(5) Fa‘aele‘ele**
        3. Purple sector not limited to ventral surface of petiole apex (entire).
            8. Veins on underside of leaf purple; corm skin pink; corm flesh white ..... ..... **(6) Niue uliuli**
            8. Veins on underside of leaf green; corm skin whitish orange; corm flesh orange ..... **(27) A‘anosamasama mūmū**
    2. Petioles free from brown or purple infusions on green background.
        9. Corm branching; flesh and fiber purple ..... **(7) Vase pa‘epa‘e**
        9. Corm not branching (single); flesh and fiber not purple.
            10. Piko with strong color radiation along primary veins.
                11. Radiations light purple; leaf scars not purple ..... ..... **(8) Manu‘a lanumeamata**
                11. Radiations dark reddish purple; leaf scars purple and usually present ..... **(9) Pute uli**
            10. Piko without strong radiations of color along primary veins.
                12. Corm skin and flesh white; petiole base line and band white.
                    13. Petiole apex purple on ventral surface.
                        14. Petiole sinus edged with purple.
                            15. Leaf lobes obtuse, undulations large and few; leaf margin red..... **(8) Manu‘a lanumeamata**
                            15. Leaf lobes acute, undulations evenly spaced and ranging from small to medium in size; leaf margin purple ..... **(14) Pula pa‘epa‘e**
                        14. Petiole sinus edged with pink.

16. Petiole dark green, free of other colors ..... **(10) Samoa uliuli**
16. Petiole light green, free of other color infusions ..... **(11) Samoa**
13. Petiole apex not purple on ventral surface ..... **(12) Mau‘u**
12. Corm skin and flesh, petiole base line and band with *some* parts other than white.
17. Petiole apex purple on ventral surface.
18. Corm flesh white ..... **(13) Sasa pa‘epa‘e**
18. Corm flesh orange ..... **(3) A‘anosamasama talo Niue**
17. Petiole apex lacking purple on ventral surface; corm skin pink; flesh white with yellow fibers ..... **(5) Fa‘aele‘ele**

1. Petioles light yellow-green or pale green.
19. Base line red; band pink; leaf veins red ..... **(28) Putemu**
19. Base line white; band white; leaf veins purple.
20. Piko reddish purple with scattered color radiation in all leaf veins (15) Magaulusina
20. Piko light purple with no color radiation ..... **(16) Talo pa‘epa‘e**

**II**. **Petioles predominantly red to pink**.

1. Corm skin white.
2. Petiole sinus margins red ..... **(17) Sugale**
2. Petiole sinus margins white ..... **(19) A‘ali‘i**

1. Corm skin pink.
3. Petiole base line white; petiole pink with green infusions ..... **(30) Pula**
3. Petiole base line red; petiole pinkish red without green infusions ..... **(18) Matalē**

**III**. **Petioles predominantly purple or black**.

1. Corm skin white
2. Petioles blackish purple ..... **(20) Manu‘a uliuli**
2. Petioles reddish purple ..... **(19) A‘ali‘i**

1. Corm skin not white.
3. Corm skin pink to red.
4. Petiole purplish brown; band pink ..... **(21) Pu‘eutu** or **(22) Manuali‘i**
4. Petiole blackish purple; band white or purplish pink.
5. Petiole band white ..... **(23) Sasa uliuli**
5. Petiole band purplish pink ..... **(24) Talo uli**
3. Corm skin not pink or red.
6. Corm skin purple; flesh and fiber purple ..... **(25) Vase uliuli**
6. Corm skin and flesh orange; fiber yellow..... **(26) A‘anosamasama mūmū**

**IV**. **Bicolored and multicolored cultivars**. **Taro with light green and red to purple petioles**, **or light green with pink and purple infusions**.

1. Petiole yellow green in sinus region, reddish purple in upper third; base line white or red; band white, pink, or purple; corm skin white.
2. Corm skin and roots white; fibers bright yellow; petiole base line and band white ..... **(27) A‘anosamasama pa‘epa‘e**
2. Corm skin white; fibers yellow; petiole base line red; band pink or purple.
3. Petiole band pink underside leaf veins distinctly red; corm not branched ..... **(28) Putemu**
3. Petiole band purple; underside leaf veins distinctly dark purple; corm branched ..... **(29) Matagifanua**

1. Petiole green with pink; base line white; band pink; corm skin pinkish white ..... **(30) Pula**

**V**. **Cultivars with striped petioles**.

1. Petiole streaked or striped along entire length.
    2. Petiole striped or streaked with white on green background ..... **(31) Talo Fiti**
    2. Petiole striped or streaked with other colors.
        3. Petiole light green with purple stripes; leaf ovate; leaf sinus line not black ..... **(32) Vaevaeula uliuli**
        3. Petiole dark green with purple stripes; leaf sagittate to ovate; leaf sinus line black.
            4. Stripes or streaks narrow and numerous with few patches of green ..... **(33) Manu‘a tusitusi laititi**
            4. Stripes or streaks broad, less numerous with many green patches ..... **(34) Manu‘a tusitusi tetele**

1. Petioles not streaked or striped along the entire length; stripes at sinus region.
    5. Petiole reddish purple with green stripes ..... **(35) Pula tusitusi**
    5. Petiole light green with purple to grey-green or black stripes.
        6. Leaf ovate; ventral surface of petiole apex purple ... **(36) Vaevaeula pa‘epa‘e**
        6. Leaf sagittate; ventral surface of petiole apex not purple ..... **(37) Faifa‘ausi**

# TARO CULTIVAR DESCRIPTIONS

## GREEN TARO VARIETIES

## 1. Vevela

Leaf: Ovate; sinus incomplete; sinus line black; lobes acute; undulations medium; leaf margin indistinct (green), leaves hanging at 45˚ angle from petiole.

Piko: Purple with some radiation into primary veins.

Petiole: Base line and band white; petiole generally green with purple shading; petiole sinus margins purplish red.

Corm: Skin white with purple leaf scars; flesh white with yellow fibers; roots white.

Description: The petiole color varies with the age of the leaf on the plant. Generally, for all petioles there is a white band that has purple-brown and green streaks rising out of the band into the petiole. These streaks merge to give a green with purple shading, like that of the cultivar Niue. In the old leaves (numbering three or more), the dorsal surface is green. In the younger leaves, the green streaks from the petiole band merge into the purple petiole. Again, like that of the old leaves, the petiole at the apex is purple only on the ventral surface. The purple from the petiole is found predominantly in the primary veins of the lobes. The overall stature of the plant is slightly spreading.

Comments: A very good cultivar. When baked the flesh is flaky and like that of a potato in taste. *Vevela* means hot.

Merrick & Togiva (n.d. ca.1975) added that the leaf margins of this variety are thin and purple. Cormels may emerge 6 in, or more from the base of the parent corm indicating this is a variety with runners.

**Fig 5**. Vevela.

## 2. Manuʻa paʻepaʻe

Leaf: Sagittate to ovate; sinus incomplete; sinus line black; lobes acute but somewhat rounded at tips; undulations small; leaf margin red; leaves hanging at almost 90˚ angle from petiole.

Piko: Purple and large with radiations.

Petiole: Base line and band white; petiole green with brown flecking in the sinus region; petiole sinus margins red, when present.

Corm: Skin white; flesh white with yellow fibers; roots white.

Description: This green cultivar has a white petiole band and brown flecking in the mid-section of the petiole. The upper third is green with purple on the ventral surface and green on the dorsal surface of the apex. The purple of the apex region is also found in the primary veins of the lower leaf surface. The petiole sinus is unevenly splotched with red. The overall stature of the plant is spreading.

Comments: A cultivar found in most fields of taro in American Samoa. The name indicates this taro is from the Manuʻa island group. Paʻepaʻe means white. Christophersen (1935) described this taro as a "subform of talo manuʻa with yellowish green petioles sparsely striped with brown or purple streaks."

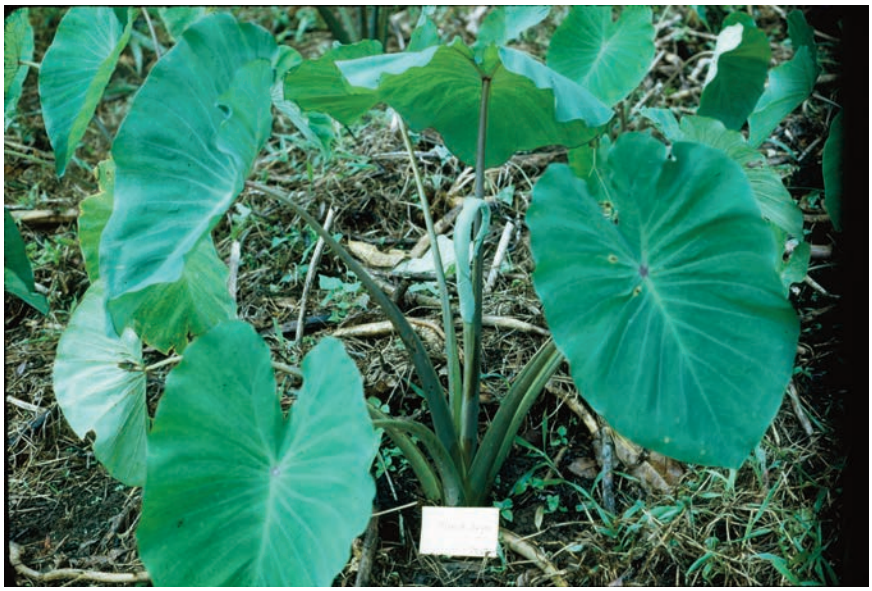

**Fig. 6**. Manuʻa paʻepaʻe.

## 3. A‘anosamasama talo Niue

Leaf: Ovate to sagittate; sinus incomplete; sinus line green; lobes obtuse and may appear to be almost overlapping with a fold at base of sinus; undulations large and few; leaf margin with no distinct color (green); leaves hanging at 90° angle from petiole; young leaves almost horizontal.

Piko: Purple with some radiation into primary veins.

Petiole: Base line and band pink; petiole light green, occasionally with purple infusions; petiole sinus margins pink.

Corm: Skin white; flesh light orange with yellow fibers.

Description: This cultivar has a pink base line and band. The petiole is typically light green above the band; however, depending on the location grown, it may be green infused with purple, which darkens the petiole. The petiole sinus margins are edged with pink. In plants one to two months old, purple may be visible on the ventral surface of the apex. In older plants, this apex coloration is missing. A purple patch is instead found in the area between the primary veins of the lobes at the place where they join the petiole on the underside of the leaf. The primary veins are green with no infusion of color. The overall stature of the plant is spreading.

Comments: This is a taro from the island of Niue. A‘ano refers to the flesh of the corm and samasama is yellow, suggesting that the “light orange” color of the corm and fibers are similar to turmeric, a plant common in the Pacific, which produces a yellow dye that ranges from light to dark yellow or yellow-orange. A cultivar that may be confused with others, such as Talo Niue and Talo Samoa (Samoa pa‘epa‘e), but can be easily identified by its light orange flesh. A talo niue samasama, perhaps a synonym, is noted by Christophersen (1935: 41) as having possibly yellow corms but “no specimen was seen.”

**Fig. 7.** A‘anosamasama talo Niue.

## 4. Talo Niue (Niue)

Leaf: Sagittate; sinus incomplete and narrow; sinus line black; lobes acute; undulations large and loose; leaf margin purple; leaves almost horizontal at 90˚ angle from petiole; young leaves strongly concave.

Piko: Purple and large.

Petiole: Base line and band pink; petiole dark green, made darker by fine lines of purple; petiole sinus margins red.

Corm: Skin pink; flesh white with yellow fibers; roots pink.

Description: This cultivar originates from island of Niue. It has a pink base line and band which has many reddish purple streaks that merge into a dark green petiole that is made darker by fine lines of purple running the length of the petiole. The ventral side of the apex is purple. The petiole sinus margins are edged with red. The overall stature of the plant is spreading.

Comments: This is the most commonly cultivated taro in American Samoa, of all the varieties in the taro collection. Anderson (1976: 26) confirmed this, adding:

> "Niue, of course is naturally from the island of Niue, [and] is one of the most important commercial taros grown in Samoa…very, very popular …grown for the market, [along with Niue uli uli] the commercial varieties for Western Samoa and American Samoa, both. You go to the market and those are the ones in predominance...niue and niue uli can both be grown and stored for several days. So, if you're going to buy taro for the whole week, you can buy them and know that they will survive that period … they are being shipped to New Zealand at the present time because of the large population and migrations from Polynesia into New Zealand..."

Merrick & Togiva (n.d., ca, 1975) noted fine purple streaks on the lower portions of the petiole of this taro and that the piko is purple but small. Christophersen (1935: 41) described Talo Niue as "petioles of the main type are green, slightly striped with red or purple and the base of the shoot and the meat of the tuber are pink. The uppermost part of the petiole is red and the veins of the leaf are red or purplish red." He records three subforms of Niue (N. uli, N. faa vave ula, and N. samasama).

**Fig. 8.** Niue.

## 5. Fa‘aele‘ele (Fa‘aeleele, Fa‘ele‘ele)

Leaf: Ovate; sinus incomplete; sinus shallow, sinus line green; lobes obtuse or acute but rounded tips, leaves may appear to have a raised crease at base of sinus; undulations few or leaf margin entire; leaf margin pink, when present; leaves hanging at 45˚ angle from petiole.

Piko: Yellow-green with purplish red where the primary veins come together at the piko.

Petiole: Base line red; band pink; petiole color dimorphic – either clear green or green with dark purple infusions; petiole sinus margins white or red.

Corm: Skin pink; flesh white with yellow fibers; roots pink.

Description: This cultivar has a red base line with a small pink band above. Above the band, there are numerous fine brown lines on a light green background on the lower third of the petiole. Depending on the locality, this brown coloration may take two forms:

1) the brown merges into a clear dark green at the area of the petiole sinus, which continues to the apex; the sinus margins are edged with red, and at times with patches of white; a distinct purple ring is visible at the apex where it joins the leaf; some leaves suggest a light trace of purple near the apex.
2) the brown merges into a purple infusion to the petiole sinus region on the ventral surface with the dorsal surface remaining green; the sinus is edged with red and the upper portion of the petiole is green with little to no purple coloration, while purple coloration is found at the ventral surface of the apex on most leaves.

Both forms show light purple coloration in the veins on the ventral surface of the leaves. The overall plant stature is somewhat spreading.

Comments: Care must be taken in identifying this cultivar, as the petiole color is affected by locality and nutrition. Merrick & Togiva (n.d., ca.1975) described the petiole as yellowish green at the apex changing to green and then purple at the base with a red petiole sinus margin. The flesh of this variety will show one of two colors, depending on where the cut is made. The flesh is pink at the apex of the corm and white in lower portions, as is typical of numerous Hawaiian taro varieties with red or pink base lines. Anderson noted that the Hawaiian taro variety Mana lauloa appears to be represented in Samoa by Fa‘aele‘ele, which means “black stem” in Samoan “…[and] is very, very similar to our Mana lauloa excepting possibly that some have a larger amount of black in the piko mark on the leaf blade and also near the sheath of the ha [petiole]. As far as quality, they seem to be identical. If you ever get them mixed up, you have a hard time finding out which is which” (Anderson 1976: 26). Hawaiian Mana lauloa, however, has a branching corm, which has not been noted in Fa‘aele‘ele. This illustrates the caution of relying solely on the above-ground morphological characteristics of some taro varieties for identification.

**Fig. 9.** Fa‘aele‘ele.

## 6. Niue uli (Niue uliuli)

Leaf: Sagittate; sinus narrow and incomplete; sinus line black; lobes acute; undulations few to regular; leaf margin red; leaves hanging at 90˚ angle from petiole.

Piko: Faint purple with radiation.

Petiole: Base line pinkish red; band pink; petiole green with purple shading; petiole sinus margins reddish pink.

Corm: Skin pink; flesh white with yellow fibers; roots pink.

Description: This cultivar has a pinkish red base line with a pink band above, changing to green at the petiole sinus region. The ventral surface of the sinus is green and the dorsal surface purplish brown, the result of fine lines of purple running the entire length of the petiole on a green background. Above the sinus the petiole is completely purple to the apex and into the primary veins. The distinctly purple veins of this cultivar separate it from Talo Niue. The overall plant stature is widely spreading.

Comments: A taro from the island of Niue. In American Samoa a very rare variety, noted for its taste and corm size. Anderson (1976: 26) used the name Niue uli and describes it as "one with dark, purple veins on the underside of the leaf blade." Along with Talo Niue, this is a highly popular taro grown for market and export. Niue uli and Niue can be stored for several days. This varietal name remains in Hawaiian taro collections (rare) as Niue uliuli; however, the purple is less predominant in the petiole and is more reddish brownish in appearance with a red sinus edge and the base line is a brilliant dark pink. A second Samoan cultivar in the Hawaiian collection, called Niue ʻulaʻula (also rare), bears a white base line but the petioles are predominantly olive green when young, maturing to a dark greenish red. The name Niue ʻulaʻula does not appear in the Samoan taro cultivar lists consulted for this book.[6]

[6] This does not rule out its presence in sources such as Samoan newspapers, oral histories, family gardens, and other materials unavailable to the researchers at the time.

**Fig. 10.** Niue uliuli.

## 7. Vase pa‘epa‘e

Leaf: Sagittate to ovate; sinus incomplete; sinus line green; lobes obtuse, undulations medium; leaf margin red.

Piko: Light purple.

Petiole: Base line and band purple; petiole dark green with purple shading; petiole sinus margins red.

Corm: Branching; skin red; flesh purple with purple fibers; roots red.

Description: A dark green cultivar with a purple band. The petiole is green with fine lines of purple the length of the petiole, which produces a purple cast and darkens the green of the stem. The ventral surface of the apex is purple continuing into the underside leaf veins; the dorsal surface is green.

Comments: This is the second of two cultivars from the Arakawa collection with a purple corm. A branching corm is characteristic of the Vase group of taro. Pa‘epa‘e means white; however, this taro is predominantly dark green to purple, including the corm flesh. In this case, pa‘epa‘e indicates this taro is lighter in petiole color than Vase uli (V. uliuli) (no. 25). Merrick & Togiva (n.d., ca.1975) seemed to agree with the above description, noting Vase pa‘epa‘e as having green petioles becoming reddish green at the apex and with a reddish petiole sinus edge. They add further detail for the leaves, observing that the leaves are purplish when young and turning green as they mature with a small purple piko and light red edge, with veins on the underside of the leaves dark purple and fading to light purple toward the outer edges.

**Fig. 11.** Vase pa‘epa‘e.

## 8. Manu‘a lanumeamata

Leaf: Sagittate to ovate; sinus incomplete; sinus line black; lobes obtuse; undulations large and few; leaf margin red; leaves hanging at 45° angle from petiole, concave.

Piko: Light purple radiating into the primary veins; may be affected by locality.

Petiole: Base line and band white; petiole green, free from other colors; petiole sinus margins purple, when present.

Corm: Skin white; flesh white with yellow fibers; roots white.

Description: The petiole has a white base line and band with green above. No other colors are present in the petiole except for a purple sector on the ventral surface of the apex, which continues into the primary veins of the leaf lobes. The petiole sinus is edged with purple or splotches of purple when present. Somewhat tall and erect in stature.

Comments: Radiation of the piko color into the primary veins of the leaves is dependent on environmental factors and locality. An uncommon cultivar in American Samoa. *Lanumeamata* refers to its petiole color (green) or any kind of green, especially vegetation. A green taro from the island of Manu‘a. Merrick & Togiva (n.d., ca.1975) recorded a “Talo palagi, lanumeamata” which appears to match the description of Manu‘a lanumeamata (palagi refers to the yellowfin surgeon fish (*Acanthurus xanthopterus*), but also a “foreigner”). Among the Manu‘a cultivar names recorded by Christophersen, M. lanumeamata is not found.

**Fig. 12.** Manuʻa lanumeamata.

## 9. Pute uli (Lauila)

Leaf: Sagittate; sinus incomplete; sinus line black; lobes acute with a wide sinus; undulations loose; leaf margin red; young leaves almost horizontal at 90° angle, with older leaves hanging at 45° angle from petiole.

Piko: Reddish purple with strong radiation into the primary and secondary veins and in the places where the veins join.

Petiole: Base line and band white; petiole dark green; petiole sinus margins reddish purple and white in the first and second leaf stems.

Corm: Skin white with purple leaf scars; flesh white with white fibers; roots white.

Description: A dark green cultivar with a white petiole band. The stem is free from other colors and the petiole sinus margin is edged with white in the two youngest leaves and reddish purple in the older leaves. The ventral side of the apex is purple; the dorsal surface is green. The primary veins of the leaves are lightly diffused with purple. This cultivar is somewhat erect in stature.

Comments: A not so common cultivar that is easily identified by its dark green petiole and reddish purple piko that radiates into the primary veins of the leaves. The strong color radiation from the piko is also a characteristic of the variety Magaulusina. Pute refers to a "center" and uli is black. In the case of this variety, the piko of the leaves (its center) is very dark in appearance. Merrick & Togiva (n.d., ca.1975) added the following information about this cultivar; petioles dark green with light purple towards the apex and petiole sinus edge irregular and white. The piko is recorded as dark reddish purple and irregular; veins on the underside of the leaves are green. They describe Lauuila (Lauila) as distinct from Pute uli with petioles green changing to purple towards the apex and sinus edge white and red, leaf with a large, dark purple irregular piko and thin red leaf margins with underside secondary veins red turning to yellowish green towards the edges.

**Fig. 13.** Pute uli.

## 10. Samoa uliuli (Samoa uli)

Leaf: Sagittate to ovate; sinus incomplete; sinus line black; leaf margin red.

Piko: Purple.

Petiole: Base line and band white; petiole dark green without other colors; petiole sinus margins weakly pink-colored.

Corms: Skin white; flesh white with yellow fibers; roots white.

Description: This cultivar has a clear dark green petiole with no other colors to darken it. From a white base line and band, the petiole is a clear dark green with a pink-edged sinus margin. The apex is purple on the ventral surface; the dorsal surface is green. This purple color runs into the primary veins on the underside of the leaf lobes.

Comments: A common variety in the fields of American Samoa. It may be confused with the cultivars Sasa paʻepaʻe and Faʻaeleʻele. The identifying characteristic separating these varieties from Samoa uliuli is the strong, wide, pink-edged petiole sinus margins and pink base in Sasa paʻepaʻe and Faʻaeleʻele, the latter of which lacks the purple on the ventral surface of the petiole apex. Uli or uliuli in the name indicates that this is a dark-colored variety (dark green), although it is not black.

No image was available for this cultivar

## 11. Talo Samoa (Samoa, Samoa pa‘epa‘e)

Leaf: Sagittate; sinus incomplete; sinus line black; lobes acute with a relatively deep, narrow sinus that may appear to have a crease at base of sinus; undulations medium to large; leaf margin purple.

Piko: Reddish purple.

Petiole: Base line and band white; petiole clear green without other colors; petiole sinus margins pink-edged, when present.

Corm: Skin white; flesh white with yellow fibers; roots white.

Description: The petioles of this variety are green and free from other colors except for the white band at the base. The petiole sinus is edged with pink, when present. The petiole apex is purple on the ventral surface and the color continues into the primary veins of the lobes under the leaf. The apex is green on the dorsal surface. The cultivar is somewhat erect in stature.

Comments: The green of this cultivar is lighter than that of Samoa uliuli, hence the name Samoa pa‘epa‘e. The leaves of this variety are recorded as bluish green in color and bluish around the primary veins, which are light purple (Merrick & Togiva, n.d., ca.1975).

**Fig. 14.** Samoa pa‘pa‘e.

## 12. Mauʻu (possibly Maʻuʻu)

Leaf: Sagittate; sinus incomplete; sinus line black; leaf margin green.

Piko: Pale yellow-green.

Petiole: Base line and band white; petiole all green without other colors; petiole sinus margins with no distinct markings (green).

Corm: Skin white; flesh white with yellow fibers; roots white.

Description: An all-green variety. A white petiole band with all green above, including the apex. The primary veins of the leaves are also green and free from other colors.

Comments: This is a rare cultivar in American Samoa. The origin of this variety is described as being from the Manuʻa island group. Mauʻu means to "hold tight," suggesting that this taro is, possibly, difficult to pull up at harvest. Maʻuʻu also refers to the grass and weeds used to cover the ground around taro plantings, perhaps a reference to the green color of this taro.

No image was available for this cultivar

## 13. Sasa pa‘epa‘e

Leaf: Generally ovate, occasionally sagittate; sinus incomplete; sinus line black; lobes obtuse with wide sinus; undulations small and regular; leaf margin with no distinct color (green).

Piko: Purple.

Petiole: Base line and band pink; petiole dark green; petiole sinus margins red.

Corm: Skin pink; flesh white with yellow fibers; roots pink.

Description: This cultivar has a clear dark green petiole with a pink band and base line. The ventral surface of the apex is purple; the dorsal surface is green. The purple of the apex flows into the underside leaf veins, prominent in the primary veins of the lobes.

Comments: A dark green cultivar, Sasa pa‘epa‘e is distinguished from Samoa uli by a pink petiole band and a strong, red-edged petiole sinus margin, whereas Samoa uli has a weakly edged pink petiole sinus margin with a white petiole band. The modifier pa‘epa‘e (white or light colored) in this case may have been applied to distinguish it from the darker colored Sasa uliuli.

**Fig. 15.** Sasa pa‘epa‘e.

## 14. Pula pa‘epa‘e (Pula lanumeamata)

Leaf: Sagittate; sinus incomplete; sinus line black; lobes acute with a wide sinus; undulations appearing evenly spaced and ranging from small to medium in size; leaf margin purple; leaves hanging at 45° angle from petioles, somewhat concave.

Piko: Light purple.

Petiole: Base line and band white; petiole light green; petiole sinus margins purple.

Corm: Skin white; flesh white with yellow to light green fibers; roots white.

Description: A predominantly light green cultivar with a white petiole band and a purple sector on the ventral surface of the apex; the dorsal surface is light green. The purple of the apex is found in the primary veins of the lobes on the underside of the leaves. The petiole margins are edged in purple. Stature spreading.

Comments: A distinguishing characteristic of this variety is the yellowish green colored flesh at the top of the corm. Pa‘epa‘e refers to the light color of the petiole and the dominance of white in the base line, band, corm, and roots. Pula is a recognized taro cultivar group name and one meaning is associated with the color yellow, as in ripened fruit, a likely reference to the corm color of this taro. Merrick & Togiva’s (n.d., ca.1975) observations of this cultivar differs slightly, noting green and red along the petiole sinus edge and red along the leaf margins (the color difference between red and purple is possibly attributable to sun exposure), with pink to slight purple color in the primary veins on the underside of the leaf. Christophersen (1935: 42) recorded Pula along with nine subforms, including P. pa‘epa‘e, but not P. lanumeamata. His description of Pula closely resembles that of Pula pa‘epa‘e; “light green, red in the uppermost part, meat of tuber yellow, of a stronger color when baked. A common form, said to be an original Samoan talo.”

**Fig. 16.** Pula pa‘epa‘e.

## 15. Magaulusina

Leaf: Ovate; sinus narrow and incomplete with a fold sometimes present; sinus line black; lobes obtuse; undulations few or leaf edge entire; leaf margin with no distinct markings (green); leaves slightly concave.

Piko: Purple with strong radiations into the primary veins of the leaf.

Petiole: Base line and band white; petiole pale green; petiole sinus margins pink, when present.

Corm: Skin white; flesh white with yellow fibers; roots white.[7]

Description: The distinguishing features of this cultivar are the pale yellowish green of the petioles the entire length of the stem, and white band at the base. A purple sector on the ventral surface of the apex is also found, the color of which extends into the veins of the underside of the leaf, with the primary veins into the lobes darker than among the secondary veins.

Comments: This variety is often called Talo paʻepaʻe (see no. 16) by Samoans of the younger generation. Talo paʻepaʻe resembles Magaulusina, except for its piko. Unlike Magaulusina, Talo paʻepaʻe is rarely found in the fields of American Samoa. Its name, which means "lots of children," indicates a large number of side shoots are produced by this taro. The root, Maga, refers to branching and ulusinā to white or grey haired, or to be elderly.

[7] Images suggest this is a branching corm taro variety; however, there was insufficient documentation to confirm prior to publication. The word, Maga, in this cultivar's name also seems to support this.

**Fig. 17.** Magaulusina.

## 16. Talo pa‘epa‘e (Pa‘epa‘e)

Leaf: Sagittate to ovate; sinus incomplete; sinus line black; lobes acute with a wide sinus; undulations of medium size, evenly spaced; leaf margin with no distinct markings (green); leaves hanging at 90° angle from petiole.

Piko: Subdued purple without radiations into the primary veins.

Petiole: Base line and band white; petiole yellow-green to pale green; petiole sinus margins pink to red, when present.

Corm: Skin white; flesh white with yellow fibers; roots white.

Description: The distinguishing feature of this variety is the overall pale yellow-green color of the petioles, similar to Magaulusina. Both have a white base line and band. A purple sector on the ventral surface of the apex is present in Talo pa‘epa‘e and the color is lightly diffused into the underside veins of some leaves. The petiole sinus margins are pink or red, when present.

Comments: A rare cultivar in American Samoa that is sometimes mistakenly identified as Magaulusina by the younger generation of Samoans. Pa‘epa‘e refers to the light color of the petiole and the dominance of white in the base line, band, corm, and roots. There appears to be some disagreement among older sources for the description of this cultivar. Merrick & Togiva (n.d., ca.1975) noted the yellowish green petiole, but add that Talo pae‘pa‘e is reddish towards the apex, with large leaves and a large irregular purple piko with light purple in the veins on the underside of the leaf. Christophersen (1935) wrote that the petioles are reddish and the underside of the young leaves whitish, less so in mature leaves, with white corm flesh. The differences may also reflect plantings in different locations and conditions.

**Fig. 18.** Pa‘epa‘e.

# RED TO PINK TARO CULTIVARS

## 17. Sugale (Talo sugale)

Leaf: Ovate; sinus incomplete with fold sometimes present; sinus line black; lobes acute; undulations few to medium; leaf margin red; leaves hanging at 45° angle from petiole.

Piko: Purple.

Petiole: Base line and band white; petiole reddish pink; petiole sinus margins red.

Corm: Skin white; flesh white with yellow fibers; roots white.

Description: A red or pinkish red cultivar turning pink towards the apex, with a white petiole band at its base. The ventral surface of the apex is purple and pale pink on the dorsal surface. The purple color of the apex extends into the primary veins of the lobes on the underside of the leaves.

Comments: This variety may be distinguished from Matale by the white coloration of the corm skin, roots, base line, and band in Sugale, as compared to red and pink in Matalē, as well as the intense red of all leaf veins in Matalē. The name Sugale refers to a member of the wrasse family, possibly the six-stripe wrasse, Sugale manifi (Sugale tusitusi) (*Pseudocheilinus hexataenia*), which is relatively common in Samoan waters (NPS, n.d). Sugale, as recorded by Christophersen (1935:41), is clearly a different cultivar, as indicated by his description of the corm. He writes, Sugale has "petioles purple or green striped with purple, leaf veins bluish purple" with corm skin and flesh, red and "of a deeper color than that of talo niue. One specimen had a tuber about 30cm long, 20cm wide [almost 12 in × 8 in]." He records two additional members of the Sugale taro group (S. se, with small tubers, and S. ulu). Observations for a Talo sugala (a likely typo of sugale) by Merrick & Togiva (n.d., ca.1975) reported this cultivar has petioles that are pink when young and greenish purple towards the apex when mature, with a red petiole sinus and leaf edge, and reddish purple to pink coloration in the underside veins

**Fig. 19**. Sugale.

**Fig. 20**. Sugale (*Pseudocheilinus hexataenia*) Source: Richard C. Wass [link].

## 18. Matalē (Talo matalē; Matale)

Leaf: Sagittate to ovate; sinus shallow and wide, incomplete; sinus line black; lobes obtuse; undulations shallow and few; leaf margin purple; leaves hanging at 45° angle from petiole.

Piko: Dark purple; pink in younger leaves (leaf 1 or 2).

Petiole: Base line red; band pink; petiole pink; petiole sinus margins red.

Corm: Skin pink; flesh white with yellow fibers; roots pink.

Description: This cultivar has a pink base and pinkish red or reddish purple stem dependent on locality. The apex is purple on the ventral surface and light pink on the dorsal surface. The underside leaf veins are distinctly red to reddish purple.

Comments: An attractive cultivar, Matalē is distinguished from Sugale by its pink corm skin, roots, and red base line, which are white in Sugale. Matalēmanu‘a and Matalēmanusa were identified as two kinds (varieties) of taro in this group (Prath 1862) but no further information was provided; the latter is also the name of a bird.

**Fig. 21**. Matelē.

## 19. A‘ali‘i

Leaf: Sagittate to ovate; sinus incomplete, somewhat deep; sinus line black; lobes acute; undulations medium, those in leaf edge of sinus tightly furled; leaf margin red; leaves hanging at 45° angle from petiole, slightly concave.

Piko: Purple, without radiation.

Petiole: Base line and band white; petiole reddish purple; petiole sinus margins white.

Corm: Skin white; flesh white with yellow fibers; roots white.

Description: This cultivar has a reddish purple petiole with whitish green sectors rising out of the white band at the base and primarily limited to the lower third of the stem. The color of the stem becomes dark purple at the apex (ventral surface); the dorsal surface is a light purple or greenish white. The reddish purple of the petiole extends into the primary veins on the underside of the leaf. The petiole sinus margins are white.

Comments: This variety is easily identified from other red taro of American Samoa, i.e., Matalē and Sugale, by the white coloration rising from the base into the lower third of the stem. Christophersen (1935: 42) wrote that “the tubers of A‘ali‘i are smooth with no to few roots.” Merrick & Togiva (n.d., ca.1975) documented this cultivar as having a reddish purple petiole fading into reddish white at the base, variable-sized leaves with a small purple piko, reddish purple leaf margins and reddish green veins. These pink or red taro varieties are rarely found in the fields in American Samoa. In the future they may be lost if not more actively cultivated. The name A‘ali‘i means chief or gentleman in Samoan.[8]

[8] This name in Hawaiian refers to the shrub, *Dodonea viscosa*, whose fruit capsules range in color from light green to deep red or maroon. ‘A‘ali‘i is found throughout the Pacific, including Samoa, and tropical to warm climate regions of the world.

**Fig. 22.** A‘ali‘i.

# PURPLE TO BLACK TARO CULTIVARS

## 20. Manuʻa uliuli (Talo Manuʻa, Talo manuʻa uli)

Leaf: Sagittate to ovate; sinus incomplete; sinus line black; lobes obtuse; undulations medium to large, especially in lobes; leaf margin purple; leaves hanging at 45° angle from petiole.

Piko: Purple, large, conspicuous; radiation into the primary veins may or may not be present, depending on locality.

Petiole: Base line lacking in color (green); band white with shades of green; petiole purplish black; petiole sinus margins pink to purple-edged.

Corm: Skin white; flesh white with yellow fibers; roots white.

Description: This large cultivar has a white band with shades of green while the rest of the petiole is purplish black throughout. The dorsal surface of the apex exhibits a light green color.

Comments: A large taro commonly found in fields of American Samoa, with large sagittate to ovate leaves and a distinctive purplish black petiole. In the Arakawa collection, purple radiations from the piko were not seen; however, they were observed in the Lyon Arboretum Samoan collection, which were replicates from the Arakawa collection. Christophersen (1935: 41–42) recorded the name, Talo manuʻa uli, but states, "no specimen seen." Of Talo manuʻa, he wrote, "The main type of this form is easily recognized by its dark, greenish purple petioles with pure purple streaks and its tall stature. The meat of the tuber and the base of the shoot are pure white. This form and talo niue are the two most common forms on Savaii." A taro from the Manuʻa islands, uliuli refers to the purplish black of the petioles.

**Fig. 23**. Manu‘a uliuli.

## 21. Pu‘eutu (Talo pu‘eutu)

Leaf: Sagittate to ovate; sinus incomplete; sinus line black; lobes acute; undulations medium and regularly spaced; leaf margin red; young leaves hanging at 45° angle from petiole.

Piko: Purple; generally restricted to the center of the leaf but with some radiation into the primary veins.

Petiole: Base line pinkish red; band pink; petiole generally reddish purple; petiole sinus margins red.

Corm: Skin pink; flesh white with yellow fibers; roots pink.

Description: Beginning from a reddish pink base line, purple streaks rise from a pink band and becoming reddish purple throughout the rest of the petiole in younger stems. In older petioles (no. 3 or more), the purple begins to fade in the upper third of the stem (like Niue), giving a lighter purple color to the overall plant. The ventral surface of the petiole is purple, with the color carrying into the underside veins of the leaf. This taro stands distinctly upright.

Comments: Merrick & Togiva (n.d., ca.1975) added that this taro is very deep purple at the petiole apex and with purple leaf margins and purplish primary veins under the leaves closest to the apex, otherwise white. This cultivar and Manuali‘i resemble each other so closely that they were not separated in the key, although there are small differences. The difference in stance of the two varieties may be their most distinguishing characteristic (see no. 22). The name, Pu‘eutu, implies some hardiness (pu‘e, to catch, hold; utu, to continue; unceasing). Pu‘e also refers to the mound in which the taro is planted, possibly an allusion to a preferred method of planting for this variety.

**Fig. 24**. Pu‘eutu.

## 22. Manuali‘i

Leaf: Sagittate to ovate; sinus narrow and incomplete; sinus line black; lobes acute; undulations loose and few; leaf margin red; leaves hanging at 90° angle from petiole.

Piko: Dark purple.

Petiole: Base line and band pink; petiole brownish purple; petiole sinus margins red.

Corm: Skin pink; flesh white with yellow fibers; roots pink.

Description: From a pink base line and band the petiole is predominantly dark brownish purple. The margins of the petiole sinus are narrow and red. In older leaves (no. 3 or more) the ventral surface of the apex is green and the dorsal surface light green. In young leaves, the dorsal surface is a light purple, almost pink. The dark brownish purple of the petiole is found also in the underside veins of the leaves. This cultivar has a spreading stature.

Comments: This cultivar appears almost identical to Pu‘eutu in color, with few distinguishing characteristics. The two varieties are separated by Togiva by differences in color (reddish purple vs brownish purple) that may be difficult to distinguish by the inexperienced eye. The stature of the plants may be the more obvious distinction. The name, Manuali‘i, refers to a bird considered by some to be a bad omen. This taro resembles the color of the Purple swamp hen (*Porphyrio porphyrio* ssp. *samoensis*), a member of the Rail family (NPS 2005: 81).

**Fig. 25** Manuali‘i.

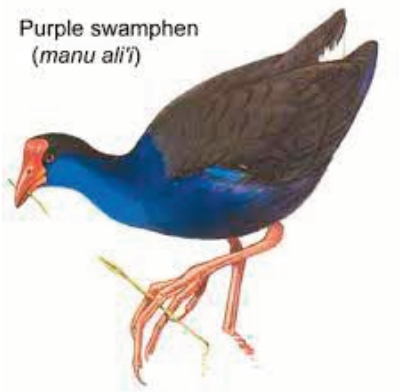


**Fig. 26**. Manuali‘i, the Purple Swamphen (*Porphyrio porphyrio* ssp. *samoensus*). Source: nps.gov.

## 23. Sasa uliuli

Leaf: Ovate; lobes acute with rounded tips; sinus short and wide, incomplete; sinus line black; undulations small and regular; leaf margin not distinct (green); leaves hand at 45° from the petiole when young and at 90° when older.

Piko: Purple; small and restricted.

Petiole: Base line and band white; petiole dark purple, almost black; petiole sinus margins edged with pink.

Corm: Skin pink; flesh white with yellow fibers; roots pink.

Description: The base of this cultivar is white, from which purple streaks merge into a dark purple petiole with pink petiole sinus margins. In younger leaves (no. 1 and 2), the entire petiole is dark purple. Older leaves are lighter in color with the dorsal surface of the apex green. The purple color of the petiole persists into the underside veins of the leaves. The youngest petioles stand erect, while older petioles are somewhat spreading in stature.

Comments: This variety is distinguished from Talo uli (no. 24) by white base line and band, and a dark purple petiole, whereas the base line is red with a purplish pink band, and black petiole in Talo uli. *Uli or uliuli* in the name indicates that this is a dark or black-colored taro. Merrick & Togiva (n.d., ca.1975) noted that the leaf edge for this cultivar is purple. Christophersen (1935) recorded Sasauli as the primary name for a group of taros, including Sasauli, Sasauli faʻamaʻi, Sasauli mūmū, Sasauli paʻepaʻe or Sasauli paʻe, Sasauli sina, and Sasauli uliuli, indicating there are a number of subforms for this cultivar. He described Sasauli as having brilliant reddish purple petioles, reddish purple leaf veins and a tuber that is "light red, similar to *talo niue*."

**Fig. 27**. Sasa uliuli.

## 24. Talo uli (Uli)

Leaf: Ovate; sinus incomplete; sinus line green; lobes acute; undulations large; leaf margin purple; leaves hanging at 45° angle from petiole, concave.

Piko: Reddish purple; small.

Petiole: Base line red; band purplish pink, width of band varying with age; petiole dark purple, almost black; petiole sinus margins pink with scattered patches of red.

Corm: Skin red; flesh white with yellow fibers; roots red.

Description: The base line is red with a pink-purplish band above. The lower third of the petiole is dark purplish black, becoming a light purple in the upper third. The ventral surface of the apex is purple with color continuing into the underside veins of the leaves and the dorsal surface at the apex being light green. The petiole sinus margins are splotched with red against the dark purplish black background. Stature upright.

Comments: The petiole sinus edge of this cultivar was described as pink by Merrick & Togiva (n.d., ca.1975). A favorite taro in American Samoa with a smoky taste. Uli refers to the almost black coloring of the petioles.

**Fig. 28**. Uli.

## 25. Vase uli (Vase uliuli)

Leaf: Sagittate to ovate; sinus incomplete; sinus line purple; lobe shape unknown, undulations medium to large on some leaves, margins entire on others; leaf margin purple; young leaves almost horizontal to petiole, while older leaves range from 45° to 90° from the stem as they age.

Piko: Purple; small.

Petiole: Base line purple; band pink; petiole predominantly purple with green shading; petiole sinus margins with no distinct contrasting color (purple; thin and translucent or whitish).

Corm: Branching; skin purple; flesh purple with purple fibers; roots red.

Description: A pink band with a dark purplish green petiole distinguishes this cultivar. In older stems (leaf no. 4 or more) the petiole turns dark green with the underside veins of the leaves purple. In younger leaves, the petioles are distinctly purplish red with little to no green shading, and the dorsal surface of the apex is green. Stature somewhat spreading.

Comments: Like Vase paʻepaʻe (no. 7), this cultivar is distinctive for its branching corms and purple flesh. Its overall character, uli or uliuli, indicates it is darker in appearance than V. paʻepaʻe. Merrick & Togiva (n.d., ca.1975) described this variety as a taro with a reddish purple petiole and sinus margin, with leaves bluish green when young, turning green when mature, and with a purple leaf edge and veins. They observed suckers (cormels) growing both outside of the parent corm radius and from between older petiole stems. One meaning of Vase is "to rule lines" or to underline, a name that seems to suggest stripes. However, to date no source has described stripes or fine streaks as present in this cultivar. It could also refer to lines of sucker shoots (runners) extending from the parent corm.

**Fig. 29**. Vase uliuli.

## 26. A‘anosamasama mūmū (‘Anosamasama mūmū)

Leaf: Highly sagittate; sinus incomplete; sinus line green; lobes acute, undulations large and loose; primary veins prominent; leaf margin purple; leaves chartaceous, dark green.

Piko: Yellow radiating into the primary veins; very light pink spot at the center.

Petiole: Base line white; band pink; petiole in mature plants generally purple with some hues of pink and green; petiole sinus margins light yellow-green.

Corm: Branching; skin whitish orange; flesh orange with yellow fibers; roots white.

Description: The mature plant is a purple cultivar with a white base line and a pink petiole band. The petiole is a dark purple in the lower third, becoming infused with pink and green in the middle third, with purple flecking on the dorsal surface of the petiole margins. The petiole margins are a light yellow-green and curl in towards the sinus opening. The upper third of the petiole is light green with purple hues before becoming completely purple again to the apex on both ventral and dorsal surfaces. This taro is erect in stature.

Comments: This variety has many color patterns depending upon the age of the plant. During the first three months of growth the pink band is very strong with pink also appearing in the petiole sinus region. The young petioles are predominantly light green with purple flecking at this stage. At three to four months, the pink in the sinus region disappears and purple dominates, while the remainder of the petiole is light green above the band and purple at the apex. Although the petiole color is variable by age there are stable characteristics, including skin and flesh color, petiole base and band color, and piko color. The dark green chartaceous, sagittate leaves with pink and yellow piko, along with the orange corm, are the distinguishing features of this cultivar. Anderson suggested this variety is identical to the Hawaiian taro variety Mana ‘ōpelu, saying that “in Samoa it [was] called a‘ano samasama mumu [sic, mūmū]…A‘ano, as I understand, means starch [as in a starchy corm]. Samasama refers to the yellow color. Mumu is brownish red [sic], which is the color in the petiole or the ha” [the Hawaiian word for petiole] (Anderson 1976: 26).[9] Merrick & Togiva (n.d., ca.1975) recorded observations for an A‘anosamasama (no binomial) which, based on the description, is likely A. mūmū. This cultivar was recorded as having a reddish brown and yellow-brown petiole, which matches Anderson, with a yellowish to whitish red sinus edge and yellow piko, although the leaf margins were green rather than purple. Of the three A‘anosamasama cultivars in this book, only A. mūmū has a yellow piko.

[9] Mūmū is translated as “red” in the Samoan language sources consulted.

**Fig. 30**. A‘anosamasama mūmū.

# BI-COLORED AND MULTI-COLORED TARO CULTIVARS

## 27. A‘anosamasama pa‘epa‘e (‘Anosamasama pa‘epa‘e)

Leaf: Sagittate to ovate; sinus wide and incomplete; sinus line black; lobes acute; undulations small and regularly spaced; leaf margin red; leaves hanging at 45 angle from petiole.

Piko: Purple; faint and small.

Petiole: Base line and band white; petiole multi-colored, yellow to green and pink to purple dependent on age; petiole sinus margins pink to red.

Corm: Skin white; flesh white with bright yellow fibers; roots white. The corm of this A‘anosamasama is not branching.

Description: This cultivar has a white base line and band, when present. The petiole sinus region is yellow-green with other color infusions. Pink to purple colors are found on the ventral surface of the lower to mid-portion of some petioles, and entire on others. On young leaves (no. 1 and 2), this pink-purple coloration extends to the apex of the petiole, turning purple on the ventral surface at the apex, while the dorsal surface is green. This purple coloration extends into the primary and secondary veins of the underside of the leaf. The petiole sinus margins are pink to red. The stature of this taro is spreading.

Comments: A distinctive characteristic of this variety is the bright yellow fibers of the corm. The name suggests that this cultivar is the lightest colored of the A‘anosamasama group.

**Fig. 31**. A‘anosamasama pa‘epa‘e.

## 28. Putemu (Matamu)

Leaf: Sagittate to ovate; sinus shallow and incomplete; sinus line black; lobes acute but rounded at the tips; undulations few and shallow; veins on underside of leaf red; leaf margin purplish red; youngest leaves hanging straight down and parallel to petiole.

Piko: Purple with radiations.

Petiole: Base line red; band pink; petiole bi-colored yellowish green and purple, or with purple markings or flecking; petiole sinus margins pink or red.

Corm: Skin pink; flesh white with yellow fibers; roots pink.

Description: This variety has a petiole color pattern that varies with age. The red base line and pink band remain constant throughout. At five to six months, the petiole is a yellowish green with a distinctive, red-edged petiole sinus and purple shading on the ventral surface of the petiole above the sinus, ascending into the apex and underside veins of the leaf. The dorsal surface of the apex is yellowish green. A light pink is also visible on some stems, predominantly on the dorsal surface of the mid-third of the petiole. In younger plants, the red petiole margins are accompanied by a pink infusion running the length of the stem. The ventral surface at the apex is purple in both young and older plants. The underside veins of the leaf are a distinctive red. The youngest petioles of this taro are distinctly erect, while the plant as a whole has a spreading character.

Comments: A common cultivar found in most fields in American Samoa. This cultivar resembles Matagifanua (no. 29). The two are distinguished by the color of the underside leaf veins, with those of Matagifanua being purple and Putemu being red. Merrick & Togiva (n.d., ca.1975) observed the petiole of this taro is yellowish white changing to red towards the apex, with a red sinus edge and thin red leaf margins, The root, pute, means center or navel, similar to the Hawaiian word, *piko*. Lilomaiava describes the center of the corm of this taro as pink, likely referring to the apex portion of the corm.

**Fig. 32**. Putemu.

## 29. Matagifanua (Matagi fanua)

Leaf: Sagittate; sinus incomplete; sinus line black; lobes acute; undulations loose; leaf margin with no distinct color (green); leaves almost horizontal at 90° angle from petiole, especially in youngest leaves, which are somewhat cupped.

Piko: Faint purple.

Petiole: Base line red; band purple; petiole multi-colored with broad streaks of reddish purple on light green; petiole sinus margins red.

Corm: Branching; skin pink; flesh white with yellow fibers; roots red.

Description: This cultivar has a pinkish purple or red base line. The pink band has purple streaks that do not continue into the lower third of the petiole. The petiole above is light to yellowish green on the ventral surface and purple on the dorsal surface. The purple coloring becomes entire at the apex and continues into the underside veins of the leaves. The stature of Matagifanua is upright. This variety has prolific side shoots.

Comments: An attractive variety that is easily identified by its distinctively marked petiole of yellow-green on the ventral surface and reddish purple on the dorsal surface of the stems. The branching corm is another outstanding feature. Christophersen (1935: 42) listed a Matangi fanua taro with red or reddish purple petioles, pale wings,[10] leaf veins distinctly dark purple, and branching corms. Merrick & Togiva (n.d., ca.1975) wrote that the petioles are purplish red on the outside of the petioles and yellowish white on the inside with a red sinus edge and that the stems are predominantly erect. Like Christophersen, they recorded deep purple leaf veins, and add that fine purple streaks extended out from the piko on the upper leaf. The name Matagifanua means "a windy land," suggesting that this taro can withstand the elements of nature.

[10] It is unknown what Christophersen is referring to here.

**Fig. 33**. Matagifanua.


**Fig. 34**. A comparison of Matagifanua and Putemu leaf vein colors.

## 30. Pula (Pula mūmū)

Leaf: Sagittate to ovate; sinus shallow and incomplete; sinus line black; lobes obtuse; undulations shallow and loose; leaf margin red; leaves hanging at 90° angle from petiole.

Piko: Faint purple.

Petiole: Base line white; band pink; petiole dimorphic, either multi-colored pink, purple, and green, or entirely pink; petiole sinus margins with no distinct markings (green; translucent).

Corm: Skin light pink; flesh white to pale yellow with very yellow fibers; roots white.

Description: This is a cultivar whose color is affected by locality and soil nutrition. The multi-colored form has a pink band and pink zone at the petiole base, with the pink continuing into the sinus region, where it blends with light green. In some plants, especially among older leaves, the petiole turns light green and then dark purple at the apex. The apex is dark purple on the ventral surface and into the underside leaf veins. This variety is spreading in stature. In its other color forms the petiole is predominantly pink. Brown flecking is found throughout the petiole with occasional green hues on the dorsal surface of the lower third of the stem. The pink coloring of the ventral surface of the petiole sinus region fades to yellow-green in the mid-third and turns purple on the ventral surface at the apex, while the dorsal surface remains a light green.

Comments: This variety is similar to Pula tusitusi, only without stripes. The very yellow fibers tend to give a yellow tinge to the corm flesh; more so after cooking.
Christophersen (1935: 42) described Pula as having light green petioles turning red in towards the apex. He recorded a Pula group of taros comprising of P. fau, P. lupe, P. manuʻa ("by one informant said to be identical with P. ula"), P. ngefu, P. paʻepaʻe, P. u (ula u), P. ula and P. uli. *Pula* indicates a fruit that is ripe, which gives it a yellow color, hence, *pula* means yellow (*mūmū* is red; the dominant pink of this variety is part of the red spectrum).

**Fig. 35**. Pula.

# STRIPED TARO CULTIVARS

## 31. Talo Fiti (Mamoga)

Leaf: Sagittate; sinus incomplete; sinus line green; lobes acute; undulations medium in size; leaf margin with no definitive markings (green); leaves hanging at 45° angle from petiole.

Piko: Faint purple.

Petiole: Base line pink; band greenish white; petiole green with thin green and white streaks of varying lengths; petiole sinus margins red, if present.

Corm: Skin white; flesh white with yellow fibers; roots white.

Description: Beginning with a greenish white band, the petiole turns green with thin white, green-tinted streaks. The streaks are found throughout the petiole. In some plants, there are patches of red found near the petiole sinus region and above. The apex is purple on the ventral surface and extending into the primary veins of the lobes on the underside of the leaf. This taro is spreading in stature.

Comments: The appearance of the purple patches near the petiole sinus region is limited on healthy, rapidly growing plants. Christophersen (1935: 41) wrote Talo Fiti has petioles "much like talo manu'a in color, purplish black but with more red. Leaf veins distinctly red, only slightly so or green in taro manu'a. The meat of the tuber is white with an offensive odor like [the taro] palamanu," Merrick & Togiva (n.d., ca.1975) concurred that the petiole sinus edge is red. This taro variety was introduced from Fiji.

**Fig. 36**. Fiti.

## 32. Vaevaeula uliuli

Leaf: Ovate; sinus incomplete; sinus line green; lobes obtuse; undulations small to medium and irregular; leaf margin green; leaves hanging at 45° angle from petiole, slightly concave.

Piko: Light purple.

Petiole: Base line pinkish white, not consistent; band absent; petiole light green with purple stripes; petiole sinus margins with intermittent patches of pink.

Corm: Skin white; flesh white with yellow fibers; roots white.

Description: This cultivar has somewhat broad (3–5 mm), reddish purple stripes from the base of the petiole on a light green background throughout, with stripes narrowing at the apex, creating the appearance of a brown tint. The ventral surface of the apex is purple. The petiole sinus margins are edged with patches of reddish pink. In certain localities, at four to five months, a distinctive reddish purple hue develops at the sinus region. This taro has runners. Stature slightly spreading.

Comments: An attractive variety with ornamental value. It is not a favorite eating taro in American Samoa. Vaevaeula uliuli is distinguished from Vaevaeula pa‘epa‘e by the width and length of the streaks or stripes: those of V. pa‘epa‘e are thinner and concentrated in the lower to mid-third of the petiole, while in V. uliuli they extend the full length of the stem.[11]

Merrick & Togiva (n.d., ca.1975) described a Vaevaeula taro (no binomial) which may be V. uliuli. The petioles of this taro have green-violet streaks leading to the sinus edge and purple on the inside of the stems; the sinus edge is green and purple streaked, becoming more purple near the top, a very small purple piko, and green leaf margins. The name vaevaeula references the feet of the Pacific spiny lobster (ula; *Panulirus versicolor* or *P. penicillatis*), while uliuli refers to the purple of the stripes, which can also be found on the legs of the ula. Vaevaeula is also the name of a Samoan variety of sugarcane.

[11] Some might describe this taro “in reverse” as having light purple to light green streaks on a predominantly purple background, as suggested by Fig. 34.

**Fig. 37**. Vaevae uliuli.

**Fig. 38** (left). Pacific lobster (*Panulirus versicolor*). Source: Wikipedia [link]. **Fig. 39** (right). Pacific lobster (*Panulirus penicillatis*). Source: Wikidata [link].

## 33. Manu‘a tusitusi laititi

Leaf: Sagittate to ovate; sinus medium depth and incomplete; sinus line black; lobes obtuse; undulations shallow and regular; leaf margin purple; young leaves hanging at 45° angle from petiole, older leaves more spreading at 90° angle from stem.

Piko: Purple, distinct; radiations from the piko may or may not be present in the primary veins, dependent on locality.

Petiole: Base line not present (green); band absent (green); petiole green with many fine, long streaks (referred to as stripes by several sources) of purple; petiole sinus margins with no distinct markings.

Corm: Skin white; flesh white with white fibers; roots white.

Description: This cultivar, like that of Manua tusitusi tetele (no. 34), has no distinct base line or band color. The petiole is green with numerous fine-lined stripes of purple that cover the entire petiole and converge into the apex and a concentrated purple zone that extends into the underside primary veins of the lobes of the leaf. The youngest petioles of this taro stand erect, while the overall character is spreading in stature.

Comments: Unlike Manu‘a tusitusi tetele, this variety has stripes that are narrow with fewer patches of green between the stripes. This distinction points out the keen observation powers of Samoan farmers. Christophersen (1935) described a Manu‘a tusitusi with abundant purplish black stripes but he does not make a distinction for laititi or tetele. Merrick & Togiva (n.d., ca.1975) followed this same lack of a trinomial, reporting that Talo Manu‘a tusitusi has greenish yellow petioles with greenish purple streaks fading to purple at the apex. The leaf exhibits light green mottling with a purple piko, leaf margins inconsistently purple and green primary veins with slight purple fading to yellowish green in the secondary veins. This cultivar originates from the Manu‘a group of islands in American Samoa. The name tells you its character; tusitusi means striped and laititi, or laitiiti, is little or small.

**Fig. 40**. Manu‘a tusitusi laititi.

## 34. Manu‘a tusitusi tetele

Leaf: Sagittate to ovate; sinus somewhat deep and incomplete; sinus line black; lobes obtuse; undulations shallow and regular; leaf margin purple; young leaves hanging at 45° angle, older leaves more spreading at 90° angle from petiole.

Piko: Purple, distinct; radiations from the piko into the primary veins may or may not be present, dependent on locality.

Petiole: Base line white or absent; band none; petiole purple striped on green; petiole sinus margins with no distinct markings.

Corm: Skin white; flesh white with yellow fibers; roots white.

Description: There is no distinctive base line or band color. The petiole is a light green covered with fine purple streaks with patches of green showing through. The streaks converge together at the apex, forming a purple sector on the ventral surface that extends into the primary veins of the lobes on the underside of the leaf. Young petioles are erect in this taro, while the overall stature is spreading.

Comment: A very distinctive cultivar that is valued as one of the best-eating by American Samoans. This variety, with the suffix “tetele,” refers to the size and number of the stripes in comparison to Manu‘a tusitusi laititi. Manu‘a tusitusi tetele stripes are larger (wider and fewer in number) with recognizable patches of green, while M. tusitusi laititi’s stripes are more delicate with fewer patches of green visible. See the discussion under No. 33 for Manua tusitusi regarding trinomial distinctions for this variety. This is another cultivar from the Manu‘a group of islands in American Samoa.

**Fig. 41**. Manu‘a tusitusi tetele.

## 35. Pula tusitusi

Leaf: Sagittate to ovate; sinus somewhat shallow and incomplete; sinus line black; lobes acute with rounded tips; undulations small and regular; leaf margin red; leaves hanging at 90° angle from petiole.

Piko: Purple.

Petiole: Base line white; band pink with streaks; petiole generally a reddish purple with whitish green streaks; petiole sinus margins pink and green, when present.

Corm: Skin pink; flesh white with yellowish green fibers; roots white.

Description: Beginning at the base, the lower third of the petiole bears red and green or white streaks on a pink background, turning reddish purple with whitish green streaks near the petiole sinus. The apex is purple on the ventral surface, whose color extends into the primary veins of the lobes of the underside of the leaf. This variety is spreading in stature.

Comments: This is the only cultivar with green stripes on a reddish purple background. Christophersen (1935) did not record a P. tusitusi among the group of Pula varieties listed. The name Pula tusitusi indicates a taro with yellow (*pula*) corm flesh; (*tusitusi)* refers to the stripes.

**Fig. 42**. Pula tusitusi.

## 36. Vaevaeula pa‘epa‘e

Leaf: Ovate; sinus incomplete with the presence of a fold; sinus line green; lobes acute with rounded tips; undulations small to medium and irregular; leaf margin with no distinct color (green); leaves hanging at 45° angle from petiole.

Piko: Reddish purple.

Petiole: Base line and band white; petiole whitish green (light green) with pink to purple streaks in the petiole sinus regions; petiole sinus margins purple, when present.

Corm: Skin white; flesh white with yellow fibers; roots white.

Description: Beginning at the white base line and band, reddish pink streaks move up the petiole into a light green background. The streaks concentrated in the petiole sinus region are purple and approx. 1–2 mm in width. The upper third of the petiole is primarily light green with scattered purple streaks, with a purple ventral surface and green dorsal surface at the apex. The purple does not carry into the underside veins of the leaf. This variety stands somewhat upright.

Comment: This cultivar is distinguished from Vaevaeula uliuli by a petiole that is lighter green overall with streaks that are concentrated in the lower third of the stem. Vaevaeula references the feet of the Pacific spiny lobster (ula; *Panulirus versicolor* or *P. penicillatis*), while pa‘epa‘e indicates this variety is lighter in color than V. uliuli (no. 32).

**Fig. 43**. Vaevaeula pa‘epa‘e.

## 37. Faifa‘ausi (Fa‘ifa‘ausi)

Leaf: Sagittate; sinus incomplete; sinus line green; lobes obtuse; undulations large; leaf margin with no distinct markings (green); youngest leaves horizontal, older leaves hanging at 45° angle from petiole, appearing concave.

Piko: Green.

Petiole: Base line and band absent of color (light green) or white; petiole light green with widely scattered black to greyish green lines or stripes confined primarily to the petiole sinus region; petiole sinus margins green.

Corm: Skin white; flesh white with yellow fibers in general with light yellow at the apex of the corm; roots white.

Description: A small cultivar with an overall color of light green with scattered black stripes concentrated primarily in the lower third of the petiole. The base line is colorless (light green) or white with a white band above. The apex and dorsal leaf veins are lacking in purple coloration. The youngest stems erect, while the overall stature of this taro is somewhat spreading.

Comments: Merrick & Togiva (n.d., ca.1975) oddly described this taro as light green with lighter green streaks and a concave leaf with whitish secondary veins. This well-known taro is clearly light green with darker stripes. A favorite taro used in the preparation of a native dish called fa‘ausi difficult to prepare and usually reserved for persons of honor as a tribute. A pig is the usual offering in tribute but when none can be found, fa‘ausi may take its place. A notable characteristic of this cultivar is the unusually large number of cormels, or side shoots, produced by a plant, often 20 or more; another is the lemon yellow corm flesh at the top of the corm.

**Fig. 44**. Faifa‘ausi.

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# APPENDICES

# I. Finding Aid

**I. Cultivars with predominantly green petioles**

(1) Vevela
(2) Manuʻa paʻepaʻe
(3) Aʻanosa masama talo Niue
(4) Niue
(5) Faʻaeleʻele
(6) Niue uliuli
(7) Vase paʻepaʻe
(8) Manuʻa lanumeamata
(9) Pute uli
(10) Samoa uliuli
(11) Talo Samoa
(12) Mauʼu
(13) Sasa paʻepaʻe
(14) Pula paʻepaʻe
(15) Magaulusina
(16) Paʻepaʻe
(26) Aʻanasamasama mūmū
(28) Putemu

**II. Cultivars with predominantly red to pink petioles**

(17) Sugale
(19) Aʻaliʻi
(18) Matalē
(30) Pula

**III. Cultivars with predominantly purple or black petioles**

(20) Manuʻa uliuli
(21) Puʻeutu
(22) Manualiʻi
(23) Sasa uliuli
(24) Talo uli
(25) Vase uli
(26) Aʻanosamasama mūmū

**IV. Bicolored and multicolored cultivars: Taro with light green and red to purple petioles or light green with pink and purple infusion**

(27) Aʻanosamasama paʻepaʻe
(28) Putemu
(29) Matagifanua
(30) Pula

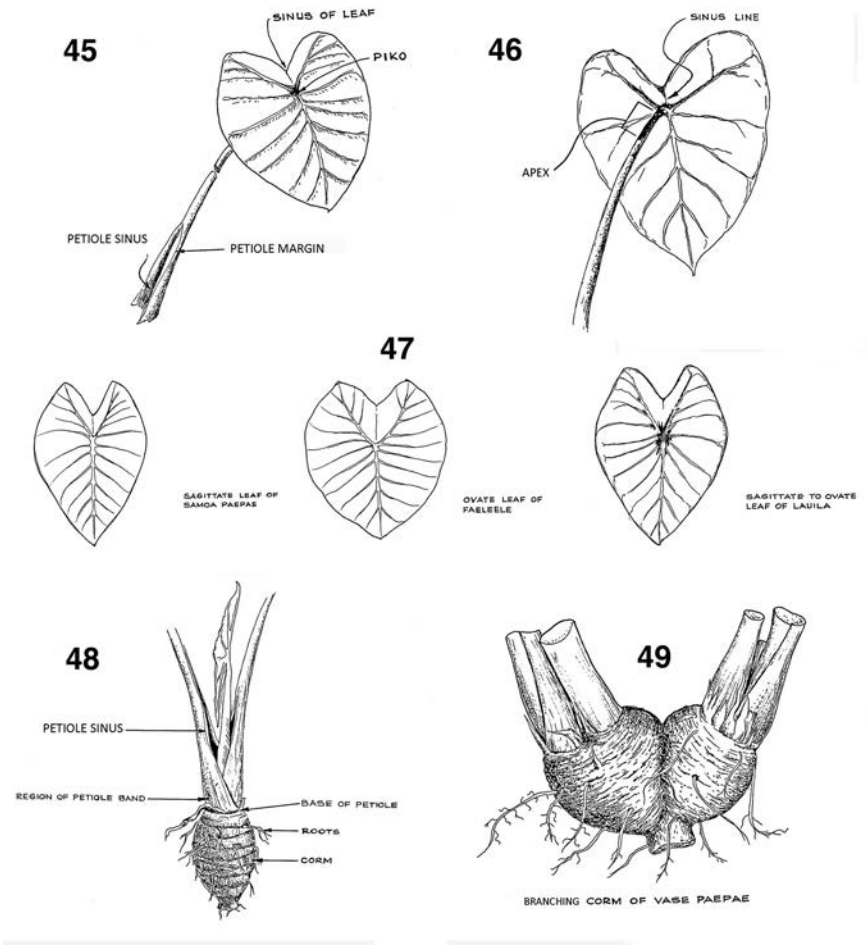
**V. Cultivars with striped petioles.**

(31) Talo Fiti
(32) Vaevaeula uliuli
(33) Manuʻa tusitusi laititi
(34) Manuʻa tusitusi tetele
(35) Pula tusitusi
(36) Vaevaeula paʻepaʻe
(37) Faifaʻausi

## II. Glossary of Taro Plant Part Terms

In reference to morphological characteristics as used in this identification guide for American Samoan taro varieties, the terms below are defined, in alphabetical order.

| | |
|---|---|
| Apex | The topmost portion of the stem or petiole, often curved, where it joins the leaf; the end of the leaf farthest from the stem, often a narrow point. |
| Band | A broad band of color immediately above the base line and typically distinct from the coloring of the rest of the petiole. |
| Base line | A distinct ring of color below the band at the place where the corm and the petiole join (kohina is the name applied to this basal ring of color in Hawaiian taro varieties). |
| Bi-colored | Of two colors. |
| Dimorphic | Of two forms; a taro cultivar with two different color stages, sometimes related to age. |
| Dorsal | The underside of a leaf; in the petiole, the surface away from the center of the plant. |
| Entire | Of the color at the apex of the petiole when it is present around the whole of the petiole, both ventral and dorsal surfaces; of a leaf margin without undulations, smooth. |
| Leaf sinus | The recess between the lobes of the taro leaf; an incomplete sinus indicates the cut between the lobes does not reach the piko of the leaf. |
| Margin | The edge of a leaf or petiole sinus of a plant, often colored. |
| Multi-colored | Of more than two colors. |
| Ovate | Said of a leaf shaped like an egg; in the case of taro leaves, the egg shape is inverted so that the narrow end aligns with the apex end of the leaf. |
| Petiole | The stem of a leaf. |
| Petiole sinus | The recess in the taro petiole where a new leaf and petiole emerges. |
| Piko | A Hawaiian word for navel; the word also pertains to the spot on the ventral or front side of the leaf where the leaf joins the stem of a plant and the three primary veins of the leaf join; often colored. |
| Primary veins | The three main veins of the taro leaf: two extending into the lobes and joining at the piko with a single vein running from the piko to the apex (tip) of the leaf; in taro they typically are raised on both the ventral and dorsal surfaces. Secondary veins are the smaller veins branching from the primary veins, typically only raised on the dorsal, or underside of the leaf. |
| Sinus | See leaf sinus or petiole sinus. |
| Sinus line | The line, often colored, on the underside of the leaf extending from the base of the leaf sinus to the point where the leaf joins the stem. |
| Undulations | The waves along the edges of a leaf blade. Undulations may be absent (leaf margin entire); large and loose, as in big waves; medium or small in size, randomly or regularly spaced; or tight (small undulations close together). |
| Ventral | The upper surface of a leaf; the surface of a petiole nearest to the center of the plant. |




**Figs**. **45–49**. Parts of the taro plant. **45**. Taro leaf, front. **46**. Taro leaf, back. **47** Taro leaf shapes. **48**. Taro plant parts. **49**. Branching corm. Illustrations by Sau Ueligitone.

# III. Excerpt from Christophersen 1935: 40–42 on *Colocasia esculenta*



All the specimens are sterile, but agree in the vegetative characters with the description of Engler (18), except that the leaves are narrower, not more than 23 cm. broad. Engler (45, p. 238) has referred a specimen from Upolu collected by Rechinger to this species. Diefenderfer no. 2 is juvenile. Eames no. 78 shows one entire leaf. The leaves of the other specimens are variously dissected.

### 3. CYRTOSPERMA Griffith

**?Cyrtosperma Merkusii** (Hasskarl) Schott: Oesterr. Bot. Wochenbl., vol. 7, p. 61, 1857.

Savaii: Tanga, altitude 10 meters, October 6, 1931, Christophersen (by native) no. 2830. Native name, *pulaa* (*pula'a* or *pulā*?).

Petiole with spines in the lower part, 123-126 cm. long; leaf blade hastate, angle between main veins of basal lobes 90 degrees, basal lobes longer than apical, 37-40 cm. long, apical lobe 32-37 cm. long. No flowers or fruits.

The leaves agree with the interpretation given by Engler (19, p. 17). *Cyrtosperma Chamissonis* (Schott) Merrill (*C. edule* Schott) is reported from Tutuila by Setchell (51, p. 108), who states that the obtuse angle between the basal lobes distinguishes this species from *C. Merkusii*. In the specimens from Savaii, however, the sinus is rectangular, agreeing with the interpretation of Engler (19, p. 15), and narrower than the sinus of *C. Chamissonis* of Schott (48), and Engler (19, pp. 15, 17, 18).

### 4. AMORPHOPHALLUS Blume

**Amorphophallus campanulatus** (Roxburgh) Blume: Ann. Mus. Hist. Nat. Par., vol. 3, p. 366, 1834.

Tau: in bush at Siufanga, altitude 3 meters, September 21, 1922, Garber no. 774. Tutuila: above Pago Pago, altitude 300 meters, March 18, 1930, Diefenderfer no. 17. Savaii: Fangamalo, September 16, 1929, Christophersen (by native) no. 676; waste land above Letui, altitude 200 meters, September 27, 1929, Christophersen no. 767; coconut plantation, Salailua, altitude 10 meters, September 14, 1931, Christophersen no. 2593. Native name, *teve* (nos. 774, 676, 767, and 2593).

Common in the plantations and on waste ground at lower elevations. The juice of the plant is irritating to the skin, a fact that was utilized by the Samoans in exercising punishment. Unfaithful wives were beaten with the *teve* plant.

### 5. COLOCASIA Schott

**Colocasia esculentum** (Linnaeus) Schott: Melet. Bot., p. 18, 1832.

Ofu: cultivated, Ofu village, altitude 8 meters, June 22, 1925, Garber no. 1100. Savaii: moist open ground, forest near lake Mataulanu, altitude 800

meters, October 2, 1929, Christophersen no. 881; riverside above Sili, altitude 400 meters, November 12, 1931, Christophersen no. 3151. Native name, *talo*.

In a wild state the *talo* (taro) is found in wet ground to high elevations. Some of the wild forms are good food plants, but are not relished much by the Samoans. Most of the cultivated *talo* is grown on dry land, "wet" *talo* (*talo fusi*) being found in only a few places. In Savaii is still practised the method of burning virgin forest, planting the land in *talo* for a number of years, and then leaving it when the productivity decreases. This method has resulted in large areas of waste land, mostly covered by *Mikania micrantha* and *Paspalum conjugatum*. Slight needs for new land and a passive satisfaction with things as they are have prevented this destruction from growing very far, so that the lowland forests are still for the greater part intact.

*Talo* is the main staple of the Samoans, and the only vegetable of ceremonial standing—that is, it is acceptable as a gift on important occasions. Breadfruit, bananas, and yams do not have this rank. The following forms of *talo* have been observed, or their names only ascertained:

Talo manu'a. The main type of this form is easily recognized by its dark, greenish-purple petioles with pure purple streaks and its tall stature. The meat of the tuber and the base of the shoot are pure white. This form and *talo niue* are the two most common forms on Savaii.

Talo manu'a tusitusi. A subform of *talo manu'a* differing in the color of the petioles, which are basically green and abundantly striped with purplish-black stripes.

Talo manu'a pa'epa'e. A subform of *talo manu'a* with yellowish-green petioles sparsely striped with brown or purple streaks.

Talo manu'a uli. No specimen seen.

Talo niue. The petioles of the main type are green, slightly striped with red or purple, and the base of the shoot and the meat of the tuber are pink. The uppermost part of the petiole is red and the veins of the leaf are red or purplish red.

Talo niue uli. A subform of *talo niue* with darker petioles. Under wet cultivation in Vaisala, Savaii.

Talo niue fa'a vavae ula. Petioles prominently striped with purple streaks. Under wet cultivation in Vaisala, Savaii. The name refers to the red, striped sugar cane.

Talo niue samasama. Petioles (or tubers?) yellow. No specimen seen.

Talo anosamasama.

Talo fangaloa.

Talo fetuna. Apparently introduced from the island of Fetuna.

Talo fiti. Petioles much like *talo manu'a* in color, purplish black but with more red. Leaf veins distinctly red, only slightly so or green in *talo manu'a*. The meat of the tuber is white with an offensive odor like *palamanu*. Apparently introduced from Fiji.

Talo fui (fuitalo).

Talo manini.

Talo pa'epa'e. Young leaves white underneath, mature leaves less so. Petioles reddish. Meat of tuber white.

Talo pone.

Talo pueutu.

Talo sina. Petioles light yellowish green, with red-margined wings, leaf with conspicuous white bloom underneath, some of the veins purplish. Meat of tuber white.

Talo ta'anga or tanga. Said to be red. Not seen.

Talo uli.

Talo vai. A common name for several forms of *talo* growing along water courses. A form growing wild at the bank of a stream above Sili, Savaii (E. Christophersen no. 3151), has light, greenish-yellow stems, leaves yellowish green above with bloom below. The tuber is as large as cultivated *talo,* meat white, soft when cooked.

A'ali'i. Tuber smooth with no or few roots.

Fa'aele'ele.

Levela.

Mangasiva. Petioles dark, reddish purple similar to *talo manu'a,* leaf veins red or purple, meat of tuber red, or brownish red, deeper red than *sungale* and much deeper red than *talo niue.* The tuber is bifurcate in the upper part like *matangi fanua. Mangasiva* is said to be a chief's *talo.*

Mangasiva i'a.

Mangasiva nono.

Mangasiva pa'epa'e.

Mangasiva uli.

Mangasiva ulu.

Mangauli.

Matale (talo matale).

Matale mangauli.

Matangi fanua. Petioles red or reddish purple, wings pale, leaf veins distinctly dark purple, tuber bifurcate in the upper part (compare *mangasiva*).

Ola ola vale. Petioles green striped with white, leaf veins green or purplish, meat of tuber white, tuber large, in one specimen 40-50 cm. long, 20 cm. wide.

Palamanu. Petioles green, the uppermost part and wings red, meat of tuber pink with an offensive odor. Plants tall.

Pula. Petioles light green, red in the uppermost part, meat of tuber yellow, of a stronger color when baked. A common form, said to be an original Samoan *talo.*

Pula'a (ula'a). Said to be a wild *talo* in swampy ground, but most probably the informants have referred to *Cyrtosperma,* which has been definitely identified as *pula'a.*

Pula'au.

Pula fau.

Pula lupe.

Pula manu'a. By one informant said to be identical with *pula ula.*

Pula ngefu.

Pula pa'epa'e.

Pula u (ula u).

Pula ula.

Pula uli.

Sasauli (talo sasauli). Petioles brilliant reddish purple, leaf veins reddish purple, tuber light red like *talo niue.*

Sasauli fa'ama'i.

Sasauli mumu.

Sasauli pa'epa'e (sasauli pa'e).

Sasauli sina.

Sasauli uliuli.

Se'ese'e.

Se'ese'e fa.

Sungale. Petioles purple or green striped with purple, leaf veins bluish purple, meat and skin of tuber red, of a deeper color than that of *talo niue.* One specimen had a tuber about 30 cm. long, 20 cm. wide.

Sungale se. Tubers small.

Sungale ulu.

Vase (talo vase).

## IV. Taro list from Merrick & Togiva ca. 1975

Adapted from Merrick and Togiva ca. 1975 *Taro Varieties in American Samoa* Booklet Volume 1, No. 5.

| Variety name | Petiole | Sinus edge | Leaf and piko | Leaf edge | Primary veins | Secondary veins |
|---|---|---|---|---|---|---|
| Talo Manu'a | Purple in the lower and upper third; blending into green in the middle third | Reddish purple | Dark green with purple piko | Purple | Veins white with purple from the apex into in younger leaves | Green |
| Vase-uli | Reddish purple | Reddish purple | Bluish green when young; green when mature | Purple | Light purple | Purple |
| Talo-Fa'ifa'ausi | Light green with lighter green streaks | Same as stem | Leaf cupped as if to hold water | Green | Whitish | Green |
| Vase paepae | Green becoming reddish green towards the apex | Reddish | Purplish when young; green when mature with small purple piko | Light red | Dark purplish from the apex fading to light purple towards the edge of the leaf | Green |
| Talo-uli | Dark purple | Pink | Small purple piko | Indistinct purple | White with some pink | Green |
| Talo-niue | Green with very fine purple streaks turning to reddish purple towards the apex | Reddish purple | Small purple piko | Green | Reddish purple tint on white | Green |
| Matagifanua | Purplish red on the outside of the petiole; yellowish white on the inner side; nearly vertical in stance | Red | Small purple piko with a few fine purple streaks | Green | Deep purple | Green |

| Variety name | Petiole | Sinus edge | Leaf and piko | Leaf edge | Primary veins | Secondary veins |
|---|---|---|---|---|---|---|
| Pueutu | Green turning very deep purple at the apex | Reddish | Purple piko | Purple | Purple from the apex into the veins which are otherwise white | Green |
| A'ali'i | Reddish white petiole turning reddish purple at the apex | | Purple piko, ranging from small to large | Reddish purple | Reddish purple fading to white | Reddish green |
| Vaevaeula | Purple on the inside of the stem, otherwise green violet streaks leading to the petiole sinus edge | Green and purple streaked; more purple towards the upper portion | Very small purple piko | Green | Green | Green |
| Talo-pa'epa'e | Yellowish green turning reddish on inside of the petiole towards the apex | | Large leaves with large irregular purple piko | Green | Light purplish | Green |
| Talo Manu'a tusitusi | Greenish yellow with greenish purple streaks fading into purple at the apex | | Green with light green mottling; piko purple | Some purple, some green | Very light purple fading to yellowish | Green |
| Talo Samoa | Green with purple apex | | Blueish green; especially blueish around the secondary veins | Green | Light purple suffusing into the veins from apex | Green |
| Matale | Green with purplish apex; purplish white when young | Reddish | Purple piko | Purple | Red | green |

| Variety name | Petiole | Sinus edge | Leaf and piko | Leaf edge | Primary veins | Secondary veins |
|---|---|---|---|---|---|---|
| Talo-palagi, pa'epa'e | Green with very fine red streaks increasing in number towards the apex which is purple | | Large purple piko | Purple | Purple from the apex | Green purple (purplish green?) |
| Talo-mumu | Light green with wide reddish purple streaks | | Small purple piko | Narrow reddish purple | Reddish white | Green |
| Fa'aeleele | Purple at the base changing to green and yellowish green at the apex | Red | Small red piko | Green | Green, occasionally tinted with red | Green |
| Vevela | Purple changing to green from petiole sinus to apex; purple fades as leaves mature | Red | Large green and purple piko | Narrow purple | Purple; occasionally purple tinted | Green |
| Pute-uli | Dark green becoming light purple towards the apex | Irregular white | Irregular, dark reddish purple piko | Green | Green | Green |
| Lau-uila | Green changing to purple on inside faces of stems in the upper third | White and red | Large, irregular dark purple piko | Narrow red | Reddish to yellowish green | Green |
| Pute-mu | Yellowish white at the base turning to red on inside faces of stems | Red | Light purple piko | Red | Dark pink | Green |
| Pula pa'epa'e | Green with a purple apex | Green and red | Light purple piko | Narrow red | Pink with green and tinged with purple | Green |

| Variety name | Petiole | Sinus edge | Leaf and piko | Leaf edge | Primary veins | Secondary veins |
|---|---|---|---|---|---|---|
| A‘anosamasama | Yellowish brown to reddish brown | Whitish yellow to reddish | Yellow piko | Green | Yellowish green | green |
| Talo sugala [sugale?] | Greenish purple; young are pink | Red | | Red | Reddish purple; occasionally pink | Green |
| Talo palagi, lanumeamata | Green | Yellowish with some red | Purple piko | Red | Purple | Green |
| Mau‘u | Green | | | Green | Green | Green |
| Sasa pa‘epa‘e | Greenish purple | Reddish | | Greenish | Green | Green |
| Sasa uliuli | | Purple | | Purple | Purple | Green |
| Talo niue-uli | Apex greenish purple | Purple | Small green and purple piko | Narrow purple | Purple tint | Purple |
| Talo Fiti | Green with white streaks | Red | | Green | Whitish green | Green |
| Pula lanumeamata | Green turning purple at the apex | White and red | Small purple piko | Purple | Purple or purple tinted | Green |

Blocks without information indicate varieties where there were no distinct characteristics recorded. Varieties were identified by Vaiau Togiva and then selected and described by James Merrick.

# INDEX