

The Magazine of the Friends of Pukekura Park

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Friends of Pukekura Park
New Plymouth



Photo Derek Hughes

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Reminiscences from the 40's

So here are a few of the recollections.

The year was 1944 and the Christmas holidays for students all over New Zealand. For the Auckland Teachers' Training college students, the six week vacation was to be cut short in New Plymouth at least. We were "manpowered" to various businesses to fill positions hard to staff locally in wartime.

Guess where this young woman and several of her mates found themselves? The Kiosk at Pukekura Park! - to do exactly what? Well; serve visitors and if possible please the woman who had to "train" her helpers in her way of doing things. She was not easy to please. Our duties began each day by sweeping the floor and then mopping it. There was no carpet but shining linoleum. Then all the tables had to be checked and polished and reset with laundered cloths and a small vase with a flower or two as available. All the chairs had to be dusted and placed "just-so" around the tables.

Food was prepared at a bench in the kitchen after it had been thoroughly cleansed and inspected with her eagle eye. Slicing bread came next - no ready sliced bread in those days - and butter applied sparingly for two reasons; one because of rationing and two, because we were constantly reminded that she could not afford it. On occasion margarine was used. We made triangular sandwiches while the boss baked cakes. I was the chief pikelet maker - my claim to praise. They were served with a smear of butter and raspberry jam and popular they were too.

The food was presented on a three tiered cake stand. Sandwiches on the bottom plate, pikelets in the middle and cakes on top. Real cream was hard to come by so we made mock cream as per instructions.

Always there were dishes to be done. We took this chore in turns with good grace, but were careful of breakages as we had to pay for anything we damaged.

All the time someone kept an eye on the dining room for customers. A bone of contention arose when it was found by the boss, that American servicemen left "tips" under the plate on leaving. She demanded - but did not get - any of these. Our wages were pitiful - she charged us for anything we ate for lunch. Tea was served but I do not remember there being any coffee on the menu. Of course the guys wanted to make conversation with us and ask questions about New Zealand but this was frowned upon by "her ladyship" as we called her behind her back. In hindsight, what a trial we were to her.

Come lunchtime on fine days, we developed the habit of dashing for the boats on the lake and spending our half hour relaxing away from the boss who would have had us available to serve customers. We rowed up and down the beautiful lake, fed the ducks and returned to work refreshed and happy.

It must have been hard for a woman alone to keep the business going when supplies were erratic and limited so "under the counter" deals were a necessity.

We all made a short speech on the last day of work and wondered where the next staff would come from. Having to put up with what staff she could get would not have made her life pleasant. We were a hard bunch to manage just typical young people getting the message of what life in the big world was like and rebelling. Thinking back over that period, it wasn't so bad - in our own way we were just like youth of today - without the violence.

Contributions should be sent to
Friends of Pukekura Park, P.O. Box 484, New Plymouth 4340.
Magazine content editor: Adrienne Tatham. Photographic editor & designer: Derek Hughes
email: project@pukekura.org.nz web: www.pukekura.org.nz

Park Maintenance

Sheryl Clyma
Field Work Coordinator

On the 13th /14th/15th December 2016 a large area of Pukekura Park became a cordoned off hive of activity. For it was on these days that a huge pine residing next to Cannon Hill and overlooking the Hatchery Lawn was removed. This *Pinus radiata* was planted by Robert Clinton Hughes on the opening day of the Recreation Ground on 29th May 1876. Robert Clinton Hughes was the driving force behind the establishment of the recreation Ground (Later known as Pukekura Park). (www.TeAra.govt.nz)

A significant pine tree decorating the skyline of Pukekura Park; May 1876-December 2017.

In 2001 this pine was measured as having a height of 46.7m, a canopy spread of 22.05 m and a trunk diameter measured at breast height of 1.732m. Today the large stump is still in place for you to visualise the size of the pine.

The 140 year old pine was assessed as being a health and safety risk to the public. The pine had an approx 15 metre longitudinal crack which in places was 30cm deep and the tree showed obvious signs of decline. The pine was recommended to be removed.

The removal of the pine tree was carefully planned and carried out by Tricky Tree Specialists. To manage the risk of public walking onto the work site a large area of the park was cordoned off. On each walking track within this cordoned off area 10 Security guards were posted by solid barrier cordons to stop the public entering the work site. The removal of the pine went to plan and there was surprisingly little damage to the Hatchery Lawn. Beneath the pine there were some small losses of shrubs which will be replaced this planting season. However the track next to Cannon Hill did look like a forestry track after many heavy truck movements.

A much smaller tree removed recently, was a Halls totara near the top of the Main Lake Serpentine on the Eastern Side. This totara was growing out over the stream on an angle and the heaving roots were failing and breaking the tar sealed pathway.

Podocarpus cunninghamii (Hall's totara), also known as thin barked totara or mountain totara, are well represented throughout the park. They are commonly found in the Goblin forest on Mt Taranaki/Egmont. The thin flaky paper like bark distinguishes it from its bigger relative *Podocarpus totara*. This thin flaky paper like bark was formerly used by Southern Maori to encase the kelp bags used for storing mutton birds. These containers are known as pohatiti. (Metcalf 2002).

Monitoring the trees throughout the park is an ongoing task and we the park staff appreciate any reportings of tree damage or trees that have collapsed as we can't check all the tracks throughout the park on a daily basis. However we do check all areas after a significant storm.



In the beginning

Roger Watkins

MSc (1st hon), PhD

In areas subject to heavy shading only a few specialized plants are able to survive. The plants associated with these sites are mainly Liverworts, Hornworts, Mosses and ferns. Generally all of the extreme shade areas, on which the various varieties grow, are cool and well supplied with water. The dry heavily shaded areas have few plants growing on them. The flora of these extremely shaded positions appears to have adapted to these low light situations by modifying and changing their physiological, anatomical and metabolic functions (to a greater or lesser extent).

Molecular analysis has resolved the liverworts and hornworts as the initiating ancestors of land plants with their genesis occurring during the Devonian period (395-345 million years ago).

They made an adaptation from sea life (Algae seaweeds) where the plants relied on being immersed in fluid that supplied nutrients and protection from solar radiation. Any transition to a land dwelling plant required a sympathetic environment, heavy shade, very wet conditions and a carbon source. Nutrients, water, reproductive ability and protection from radiation depended on the evolution of specialist organs.

Initially requiring poikilohdry (the capacity to tolerate dehydration to low cell or tissue water content and to recover from it without physiological damage) is the ancestral condition of the early land plants. Fungal and bacterial symbiotic associations, that are ancestral to modern mycorrhizas, evolved in these very early land plants. Mycorrhizal filaments have been found in fossil sections of both liverworts and hornworts. In most extant species the mycorrhiza assist the host plant to absorb phosphates, nitrogen, many organic products can equilibrate homeostasis (water and electrolyte balance) and help to prevent dehydration within the host plant.

Water absorption in the first fossil plants, putatively lacking vascularity, relied on capillary action between cells with stomata (breathing pores) producing a transpiration-driven flow of water and nutrients.

Reproductive processes became much more specific on a cost benefit scale and developed an alternation of generations where the gametophyte (producer of zoospores "sperm" and eggs) remained as the major permanent body. The spore bearing organ (antheridia) developed zoospores that required a water film to swim in and be attracted to and fertilize the egg which had developed in archegonia (womb) on the edge of the plant thallus (body). Once fertilized a separate structure bearing spores is produced, this structure elongates and produces spores that finally die after having had a very brief existence. These early plants provided the basis of all food chains and were progenitors of primeval oxygen. This process is the opposite of animal life in which the gametophyte (haploid, sperm and egg producer) which is transitory is fertilized then nurtured and developed by the diploid parent (sporophyte).

Over 500 species of liverworts can be found in New Zealand; approximately 7% of the world's estimated 7,000 species. The biological key to man's existence on earth can be found in the genes of Pukekura's Liverworts and Hornworts.

Many liverworts, known as leafy liverworts, can be mistaken for mosses, the distinguishing characters being:

Mosses. Spiky appearance with lanceolate leaves arranged evenly around a central stem. Have a mid-vein in the leaf with no lobed margins

Leafy liverworts. Main leaves arranged in two rows with many having a much smaller leaf as an under leaf on the ventral side of the stem. Never have a mid-vein in the leaf and usually have lobed margins on leaves.

Thallose liverworts. Leaf has one flat surface which can be bifurcating. Has small cups on the dorsal surface of the thallus which contain gemmets (propagules of the gametophyte).

For the serious collector there are a number of histological and anatomical differences, oil bodies, chloroplast sizes, etc. too detailed to describe here.

One exciting thallose liverwort found at Pukekura belongs to the Monocleales a single genus with only two species described. The giant *Monoclea forsteri* can be found in a number of very shaded moist banks. Colonies of *M forsteri* occur on some of the fernery tunnel walls. *M forsteri* is the larger of the New Zealand thallose liverworts. Look for a lobed very dark green glossy thallus which hugs the ground, has no midrib and can grow up to 200 mm long by 50 mm wide with a thickness of between 3-4mm. In optimal situations *M forsteri* can cover many square metres and give the appearance of a dark green jade waterfall. Large areas of *M forsteri* used to occur in the Avery reserve

Another thallose liverwort found at Pukekura and unfortunately in many gardens is the Marchantiale *Lunularia cruciata* renowned for its invasive nature. Identified by its pale green thallose leaf it can grow up to 30mm x 12mm wide. It exhibits crescent shaped cups on the dorsal surface of the thallus. This explains their ubiquitous nature, for inside the cups are very small gemmae (cuttings of the thallus) each one primed to immediately germinate on ground contact. The gemmae cup is activated by water droplets which splash into the cup on an angle dictated to by the interior saucer shape. This powerful impact can remove the gemmae propelling them at a good velocity many metres distant from the plant.

On the heavily shaded banks of the park lakes can be found species of the hornwort, *Anthoceros* a small rosette plant that is often found growing with moss.

A huge diversity exists within the liverworts, hornworts and mosses, these divisions in total represent 1103 genera and over 22,000 spp. The only way to consider these fascinating plants is to take part in field trips conducted by an expert. I suggest if you are interested refer to the books cited in the references below.

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Work Experience- Christchurch Botanical Gardens

Rose Hogwood
Staff member

In January of this year, I was given the opportunity to work in the Christchurch Botanical Gardens for two weeks. Not only did I gain valuable work experience, I also used the time to compare and contrast the differences between our Park and theirs.

It is hard to directly compare the two Parks because they are so vastly dissimilar, and have very different histories which have led to each Garden being what it is today.

I enjoyed learning about the history of the Christchurch Botanic Gardens- particularly the fact that that part of the site was used by the Canterbury Acclimatisation Society who used it as a space to introduce exotic flora and fauna to the New Zealand climate. Trout, salmon, bumblebees, small birds, pheasants, hares, red deer, ferrets and rabbits were all first bred in this area before they were successfully released in the wild. Trialled species which were not successful included emus, kangaroos, and a Californian Sun Bear. The trials lasted from the 1920's to the 1960's, and, as we all know, unfortunately introduced several species that we now consider pests.



However, over the years since the Acclimatisation grounds were closed down, the area has become a true Botanical Garden with a big focus on public education, which was one of the things I thought the Gardens did really well. Although only 2% of Park users come specifically to learn about plants, 87% of Park users appreciated having the signs available and understandable- so in line with this, there is a lot of signage which is done with the purpose of education. Examples of this include signs showing ways to drought-proof a garden, and another showing the many historic uses for Sansevieria.

As well as this, the Gardens play host to their own information centre where the public can learn about the history of the Gardens, and of course, gain knowledge of the present day Park.

In this same building (which was designed by the same company who designed the Len Lye Centre and opened in 2014) is a public café and the staff facilities. The staff particularly enjoy the café, as they get a 50% discount on the food!

The building also houses the huge plant propagation area. Most of the plants grown here are destined for the beautiful conservatories, of which there are four. The largest of these is Cuninghame House, a huge two storied Victorian glasshouse which contains an impressive tropical collection. Beside this are Townend House (showcasing flowering plant displays which are changed four times a year), Gilpin House (orchids and carnivorous plants) and Garrick House (a brilliant collection of cacti).



Most of the sections of the Botanical Gardens focus on specific plant collections. Examples of this include the South American collection, the Fuchsia collection, and the Heritage Rose Garden. The gardens have been separated into nine sections, each maintained by a Curator, who takes enormous pride in what they do (just like our staff here!) I was really impressed with the level of knowledge that each of the Curators had, and their willingness to pass it on, not just to other staff members, but also to the general public.

One thing that really did surprise me was the number of staff that the Council employs to maintain the Gardens. The area of land they look after is very similar in size to our Park gardens but they have approximately three times the number of staff to do it.

They are lucky to have such a big staff because they have problems to deal with that we fortunately don't have here. One of these problems is that, as of winter 2016, products containing Glyphosate can no longer be used in public spaces within the city boundaries. Therefore a lot more time must now be dedicated to weeding and push hoeing (although they do have a flame thrower they can use to kill weeds very quickly on paths and cobbled areas!).

Another issue they have which takes up huge amounts of time is watering- everywhere, everything, all the time. I hadn't realized just how dry Canterbury could be. The staff spend hours and hours hand watering and shifting around sprinklers, even on the well-established gardens. Fortunately the entire Gardens are closed at night, so the sprinklers can even be left on overnight.

This need to water became a huge issue in the aftermath of the Canterbury earthquakes as the large water main running through the whole Park was severed during the second quake. It took several months to fix, so a lot of plants perished during this time. I was particularly interested to learn of the effects of the quakes on the gardens. As it turns out, these effects were far reaching and some of them are only just showing up now.

The first (September) quake caused widespread damage in the gardens, mostly in the form of large cracks opening up and huge areas of liquefaction. Although this damage was all tidied up fairly quickly, it was the damage that couldn't be seen that was the actual problem. The quake caused a lot of unseen root damage to approximately 35 large specimen trees- so much so that when the February quake occurred, these large trees literally 'popped up' out of the ground due to having little to no root support. Several other trees are only now showing signs of deterioration due to root damage, such as a huge *Araucaria bidwillii* with damage to the top half of the tree. The second quake also created large cracks and liquefaction, as well as causing some areas of path to raise or lower.



Now however all these things have been repaired and the gardens are once again a peaceful, happy place enjoyed by locals and tourists alike. I truly recommend anyone heading down to Christchurch to take the time to slowly wander through the Gardens, as I'm sure they will enjoy their time there as much as I did.

Swan Walk, Pukekura Park.

Between the Shortland St Entrance and the entrance to Hughes Walk opposite Azalea Place, lying parallel with Brooklands Rd and just inside the boundary is a path of about 200m called 'Swan Walk'. The name is unofficial and has an amusing origin.

In the 1965-90 era when I was Curator the staffing comprised a groundsman, one resident crew covering horticulture, another responsible for general maintenance of paths, trees, mowing, etc and a handyman-painter.

Large level areas of grass free of obstructions such as the Sportsground, Playground, Brooklands lawns, were maintained by tractor-drawn gang-mowers operated by the late Ian McDowell's 'outside' team. Rough areas of grass on slopes such as the eastern and western hillsides or with obstructions such as trees etc as inside the boundary between 25 Victoria Rd and Shortland St Entrance were our own responsibility. For this activity we had a 'Gravelly' mower which was a particularly robust machine with two wheels, a 60cm (2ft) front-mounted rotary blade with skids and though self-propelled, was steered by the operator applying weight, to left or right on a pair of handles. It was a very physically-demanding machine to operate safely, especially on slopes amongst trees and shrubs and regardless of the combined skill and strength of the operator, there would inevitably be arboreal casualties attributable to 'Gravelly Disease'.

During this era the manning of the Parks & Reserves Dept maintenance crews was an irresistible attraction to farmers who had retired and moved into town only to find that they were restless with boredom. In general their level of skill with machinery and tools, knowledge of drainage, path formation and maintenance coupled with a high work ethic, self-motivation, independence and loyalty made them highly respected and trusted members of the workforce. Two such members of the Pukekura team were Reg Hayman and Vic Swan.

Amongst a multitude of other responsibilities, Reg operated the Gravelly and Vic drove the tractor but this incident relates to Vic as a constructor of the type of bush tracks for which the Park is reknowned.

Reg had a logistical problem. When he had mowed the western hillside beside the Waterfall then moved up to the Victoria Rd frontage his next destination was the Goodwin Dell and the Rhododendron Dell areas but to get there he either had to get out onto the street which required a key or backtrack down to the Waterfall and Hughes Walk. A narrow track cut just inside the Brooklands Rd. boundary would solve the problem so he called on his trusted workmate to have a look at the area with him. Vic considered that the idea was sound but Reg informs me that he remarked that he would have to consult with me. Now I don't want to do Vic an injustice but I have no recollection of a conversation on the matter and subsequent developments rather suggest that the uncertainty may not be just a reflection on the state of my memory. Be that as it may, the idea was sound and practical and I cannot see any reason why I would have objected. After all it now forms an integral section of the 10 km boundary walk which I later deliberately set out to establish and completed after retirement.

The track was formed and proved its worth. Then rather surreptitiously a legitimately painted finger-sign appeared attached well up on a totara proclaiming 'Swan Walk'. This would certainly not have been at Vic's behest but was obviously a tongue-in-cheek gesture by his workmates in recognition of his strong sense of independence and teammanship. The sign was positive yet relatively unobtrusive and generated a high level of humour at all levels. No doubt because he was so highly respected by everyone, no instruction was ever issued for removal and it remains in place to this day though somewhat the worse for wear.

Vic's interpretation of work ethic and his level of self-motivation were quite outstanding and at a time when a certain amount of discretion was allowable, ensured his continued employment well into his seventies, only coming to an end as the consequence of an illness at a time when he could still make workmates a third of his age wither. He had been brought up in hard times in hard places and though physically tough (he never wore socks and scorned warm clothing) he was mild-mannered and very respectful except toward the indolent. There was a tendency toward impatience when jobs were near completion and one had to be very alert when action was called for such as when loads were almost ready to move. They would move.

I well remember an occasion when we had to haul a large log from Goodwin Dell to the transfer dump concealed behind Cannon Hill. What is called a snig chain secured to the drawbar of the tractor was involved. At its free end is a strong open-ended hook. The chain is looped around the end of the log and the hook draped over the

chain in such a manner that when hauling tension comes on the chain, it will slip through the hook and tighten around the log. In a perfect world it is as simple as that but in practice, it is sometimes necessary in the final stage of slowly taking up tension to give the hook a smack with the back of an axe to ensure that the chain will bite sufficiently tightly into the log to ensure a good hold. On this occasion it didn't and nobody had time to deliver the critical blow because Vic slipped the clutch and was off with a mighty hiss and roar, eyes to the front like a good soldier, oblivious of our shrieks of warning heavily muted with laughter and of the fact that the log was still with us --- something that he didn't realise until he was close to his destination.

Vic's sense of independence and level of self-motivation have been touched upon. Sometimes when acted upon they did not have the desired outcome, as Reg recalls.

A puriri tree near the soundshell of the Bowl of Brooklands had sustained damage and a hanging branch required removal. He and Vic inspected it in the morning and in typical fashion Vic wanted to get on with the task but Reg concluded that a ladder was required and that they would therefore arrange to return with the appropriate tools from the shed behind the Curator's office when such an exercise could be organised.

Whenever any team job was completed, if any lapse occurred before instructions for the next were given, Vic would take the opportunity to get on with one of the many solo tasks within his responsibility. Therefore Reg was not unduly concerned when he did not make contact with him during that afternoon but when the time was approaching to clean up tools prior to knocking off work and Vic did not appear on the scene he was puzzled. Then he recalled the puriri task discussed in the morning and knowing Vic only too well, set off straight away directly for the Bowl.

Sure enough, there was Vic up in the puriri tree-----but hanging upside down because one foot was wedged in a branch! Now they really did have need of a ladder but that was a long way away and Vic had already been hanging for a considerable time. Fortunately Reg was just able to reach up from ground level and help support his weight then with a pronged stick, prize his ankle out of the fork in which it was wedged whereupon both crashed to the ground in a heap. When questioned about his plight, Vic's simple reply was, "Well, worse things happen in Russia."

Vic Swan can be described as 'a character' but of the most endearing kind; modest, dedicated, loyal and respected by all and with a good sense of humour. I believe that he was awarded the Military Medal while serving in France or Belgium in the First World War but I am not aware of him ever entering into any discussion on his wartime exploits. Although he was in no way emotionally demonstrative he obviously had a fatherly rapport with Iolanthe Small and Ailsa McCrone of the Fernery because his last words to Reg on the day he left were "Look after the girls, won't you Reg." His love of the Park was so great that his ashes were interred in the dam at Brooklands, not far from the tree that may well have been responsible for his demise but for the astuteness of his workmate. A magnolia was planted to mark the site and more recently his family has installed a seat in his memory.

To me, Swan Walk is a reminder of those dedicated, rurally trained staff who, without any advanced schooling or academic training knew how to perform such tasks as form paths that would not be drainage channels and maintain them for the most part simply with a leaf rake and long-handled shovel. Pride in their craft and their park would not allow them to leave litter or leaves on paths and without instruction they would be out in foul weather - when it counted most - releasing rainfall trapped as small puddles and clearing watercourses, thereby preventing the escalation of initially minor problems.

Swan Walk honours the lesser-known who have played such a vital role in the establishment and maintenance of this very special park and in keeping with this sentiment, it should be kept simple.

George Fuller. 9th August, 2004.

Footnote. I was recently walking along Hughes Walk just below Swan Walk when I was very surprised to hear coming from the bush above, the high pitch of an engine straining. It continued for some time and mystified me. Assuming that it originated from Brooklands Rd. I decided to investigate, taking a straight line up through the bush. To my surprise I came across one of the proliferating fleet of wide-tyred vehicles objecting to being coerced along a narrow section of Swan Walk! It was carrying a tree destined for planting a few metres further along. I had cause to wonder whatever happened to barrows and ponder over what Vic would have thought about the situation.



Top: A new look entrance.



Left: Part of the area left by the recent removal of the caretaker's residence was handed over to a trainee to manage, and features a cottage garden and a collection of plants that are both ornamental and edible.

Below: A less formal corner in which to relax and spend a quiet moment.



Photos Val Smith

King Edward Park, Hawera

Val Smith

A small group of Friends took up the offer of a mid-spring trip (October 13 2016) to Hawera and enjoyed perfect weather and an informative tour of the 4-hectare park with curator since 2006, David Bruce. His plans for the redevelopment of the park were to retain the original formal design, open up spaces and revitalise the plantings and collections.



The 1904 memorial gates were refurbished in 2009.



A captive audience - almost! Where was the photographer?

Formal rose gardens and colourful annual beds are enclosed by hedges in a variety of species and a range of dimensions. The original massive boxthorn and pampas windbreaks have long gone, but the manicured 110 year-old totara hedges that once flanked the pathway to the sports fields remain.

After being used just once on a training day in 1885, the cannon was set up in the park in 1912, and the barrel has since been polished by the pants of generations of small children.



This just scratches the surface - there's much more to see and enjoy: gnarled old trees, the colourful and much-used children's playground, the Wendy statue, observatory, ponds, picnic and barbecue facilities - all well worth a longer visit than the customary toilet stop!

Animal Training

Jolene West
Brooklands Zoo Keeper

Last July we had the privilege of Ryan Cartlidge from Animal Academy in Wellington coming to Brooklands Zoo to talk with the keepers about animal training. The main purpose of all animal training is that the animal is given the choice to train in a positive environment. As time goes on, the behaviour the keepers want from the animals will increase in frequency as they are reinforced with their favourite food item.

The keepers at Brooklands Zoo carry out animal training sessions every day. This includes scale-training (standing still on scales to be weighed), being recalled into a den, touching a target stick or station training (standing still).

When Ryan returned to Wellington, all the keepers were given an individual animal to work with each day. My assigned animal is Ricotta the alpaca.

My very first training session with Ricotta involved me pressing a clicker and giving him his favourite food (a pellet). This is called clicker association so as time goes on, whenever Ricotta hears the clicker he is reinforced with a pellet. I did this every day that I was at work for a period of time, after which we moved onto target stick training.

At the start I just showed Ricotta the target stick, which had a yellow circle on the end. Every time he looked at the target I clicked and rewarded him. On a couple of training sessions Ricotta did lose focus and walk away from me, which is fine – that's when I would finish the session and try again the next day. After one week Ricotta figured out that if he touched the target with his nose, he would receive a pellet. Now, Ricotta will follow the target around his whole enclosure!

The keepers' main aim with target stick training with the alpacas is to have them follow the target and walk onto the scales to be weighed once a month without having to be haltered up first. By following a target stick, the animals are given the choice to follow without any negative reinforcement. Our next step with the alpacas is to station them to an area in their enclosure so we can put halters on them without them moving all over the enclosure.

When you are up at the zoo next, look for the keepers carrying out their animal training sessions.

