new zealand potter vol 17/2 spring 1975

potter

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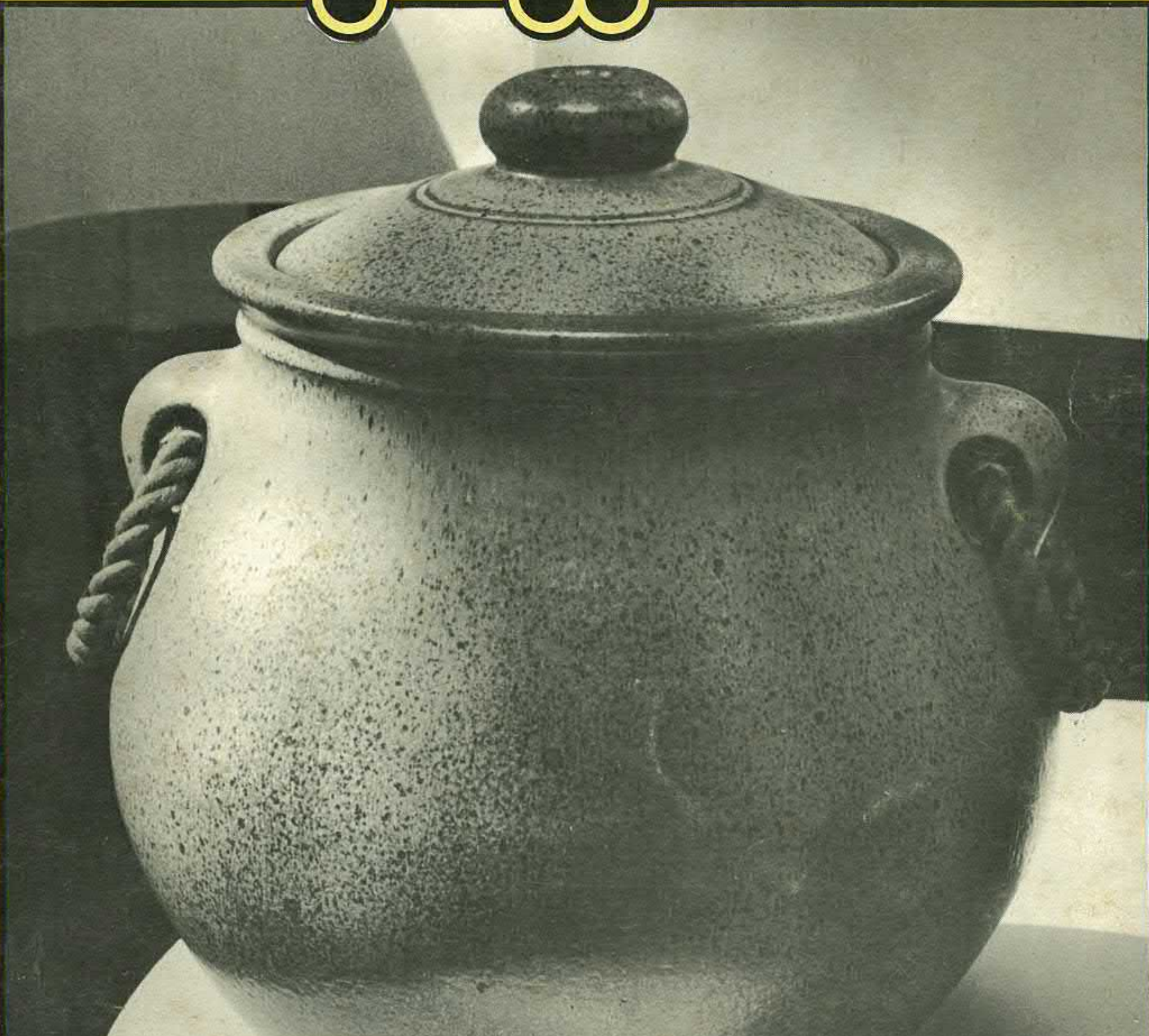

It had to come. For seven years the Potter has been a dollar a copy. With increased paper and printing charges we are obliged to increase the price. From the first issue in 1976 the subscription will be $3. So far as we know Potter is still the cheapest pottery magazine there is.
In line with the change in available paper size from imperial standard to international standard, we have been lead to change the size of the Potter. We hope that changes in format and presentation add to your pleasure when receiving your copy.
At the request of readers advertisements have been grouped to make the information easier to find.

cover

Storage Jar, Shino Glaze by Lawrence Ewing, Rangiora, shown at National Exhibition, 1975. Photo Stan Jenkins.

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Contents

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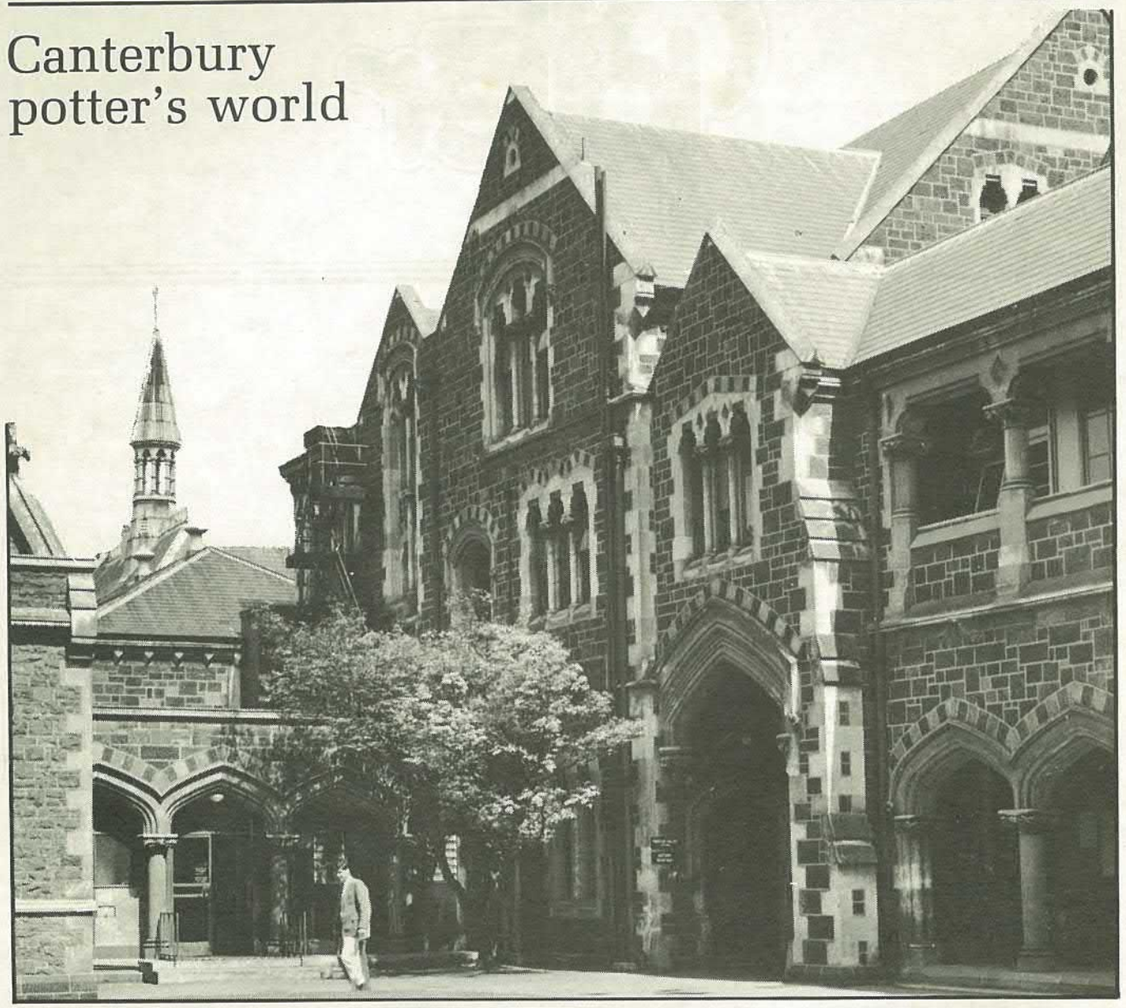
Canterbury potter's world



University for the arts

The University of Canterbury city site is being put to new use to house as many types of arts and crafts as possible. For a rent which covers expenses, groups such as potters, weavers, ballet dancers, the Court Theatre, are able to have their own rooms. The library is being altered to make a fine exhibition hall and on Saturday mornings its wonderful to walk around and hear the orchestras playing and other sounds of people rehearsing. Tiered lecture rooms for talks, nearby kitchens and offices provide splendid facilities for the Christchurch Arts Centre in a fine old building.

The Canterbury Potters Association has applied for space in the old maintenance block. We are looking forward to having our own home for our growing library and the pots we have collected over the years.

Denise Welsford.

Pottery Classes

The following classes are available in Christchurch. There is a waiting list for beginners.

Risingholm Community Centre
Springfield Road Craft Centre
Shirley Activities Club
Mt Pleasant Pottery Group
Halswell Pottery Group
Bishopdale pottery class
Riccarton High School
Shirley Intermediate School
Hornby High School

In addition, some local established potters hold classes for those who have reached a reasonable standard. These are Paul Fisher 859-283, Peter Bamford 324-307, Denys Hadfield 324-307, Adele Mathews 750-22

This information comes from the Learning Exchange paper published in Christchurch. Subscription $2 from Box 8233 Riccarton.

Studio 393

Potters tend to form groups as amateurs and function in a supportive way. The emphasis is on amateurism and those people who move on generally do so alone. Studio 393 is an attempt by six established potters to come together to work, discuss, criticise and generally stimulate one another's ideas. The studio at 393 Montreal Street, Christchurch, which is used as a workshop and gallery is open to the public on Fridays. The group whose membership is Frederika Ernsten, Lawrence Ewing, Denise Welsford, Michael Trumic, Rex Valentine and Margaret Higgs, has held one exhibition with invited potters and Phillip Trustrum painter. Other exhibitions are planned with potters from further afield.

The group has been going since March and although a diversity of personalities must be catered for, the aim is to build a communal workshop. This would be a focal point for visiting potters and hopefully a place where young potters could come to gain experience.

Margaret Higgs

Risingholme

Risingholme Community Centre, Opawa, has long been a teaching centre for aspiring potters. The first tutors were Doris Holland, better known as the painter Doris Lusk, and Margaret Frankel, now Lady Margaret Frankel of Canberra, who is still potting and firing a gas kiln. From small beginnings in 1946 in what were the original stables of the Risingholme homestead (built in 1864 by George and Mary Reeves, the parents of William Pember Reeves, who later became a Member of Parliament), classes have grown to over one hundred potters enrolled in six evening and daytime classes working in a well-equipped workshop which has been extended this year. Equipment includes two large electric kilns able to reach stoneware temperatures as well as wheels and ample shelf space and clay storage. Beginners mostly work in earthenware in their first year. Those who continue, improve their skills and develop interests in various directions: stoneware glazes, kiln packing and firing. Some classes make occasional forays into raku and primitive kiln building and firing. Present tutors are Freda Newfield, Raynor Scandrett and Betty Ivan. Enrolments are taken in mid-February for a complete year divided into three terms.

Betty Ivan

Rangiora

The Rangiora Pottery Group has been thriving since 1968. We have been lent a two storied hundred year old farm house in which we have all our facilities. Fire, frustration and fellowship are provided by our oil fired drip feed two chamber kiln — the bricks being obtained by demolishing the local gas retorts. All members are encouraged to learn to fire, and this sorts out the stayers from the players. As a result of our group we have two members of the New Zealand Society and two full-time potters plus a pottery equipment manufacturer.

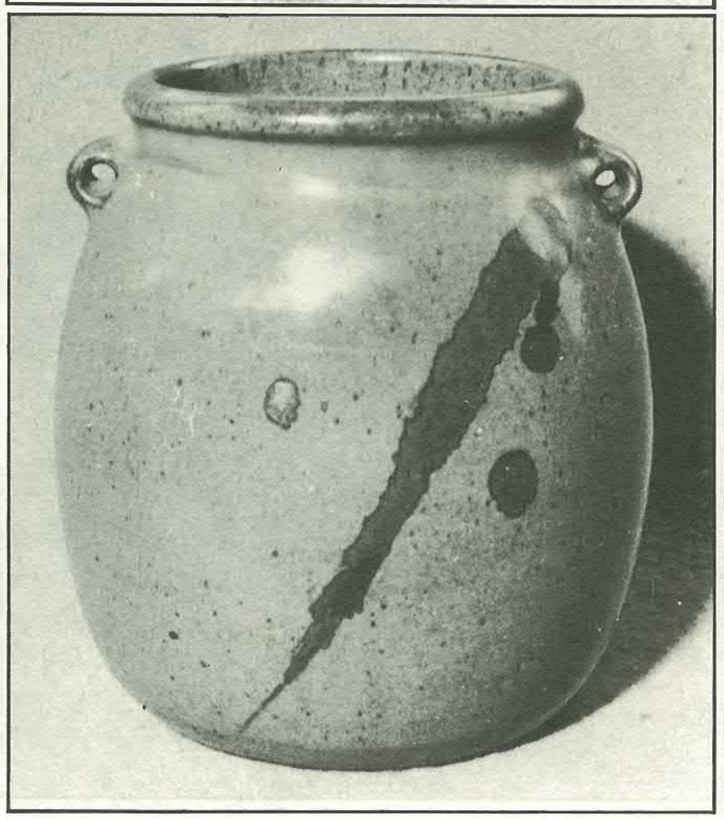
Some of us have outgrown the group having built our own kilns, in fact there is a one mile stretch of road at Loburn where there are four kilns. Our activities are varied. Monthly topics have included clay hunting, beach firings, ropework and the usual workshops. We are very fortunate in having a pool of informed help from the Canterbury Potters Association.

Adrienne Lamb

Paul Fisher

"I pot seven days a week, have a 25 cubic foot downdraft oil fired kiln which I fire to 1320°c. I see my relationship with clay as an endless mating of ideas which brings both joy and despair. One can only survive if one remembers that clay is the master and respect it as such. And then the honesty and simplicity one strives for begins to be revealed in the pots themselves."

Below. Ringbox, celadon green glaze, iron decoration. 50mm (2") high. Store jar celadon blue, with iron decoration 400mm (16") high by Paul Fisher.

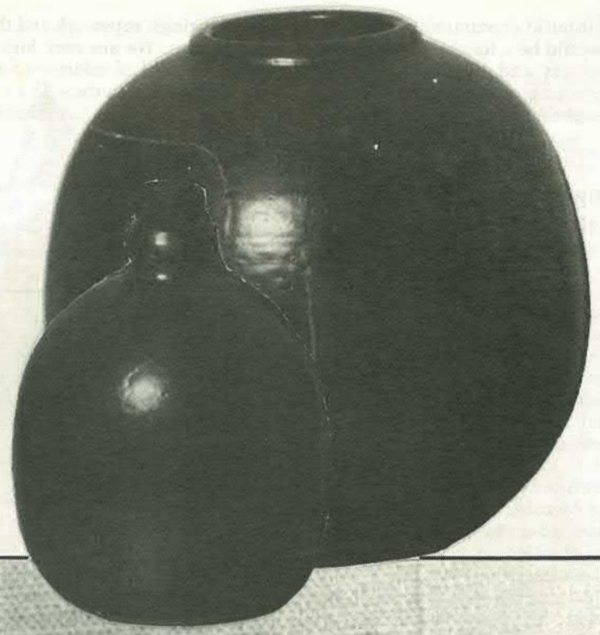


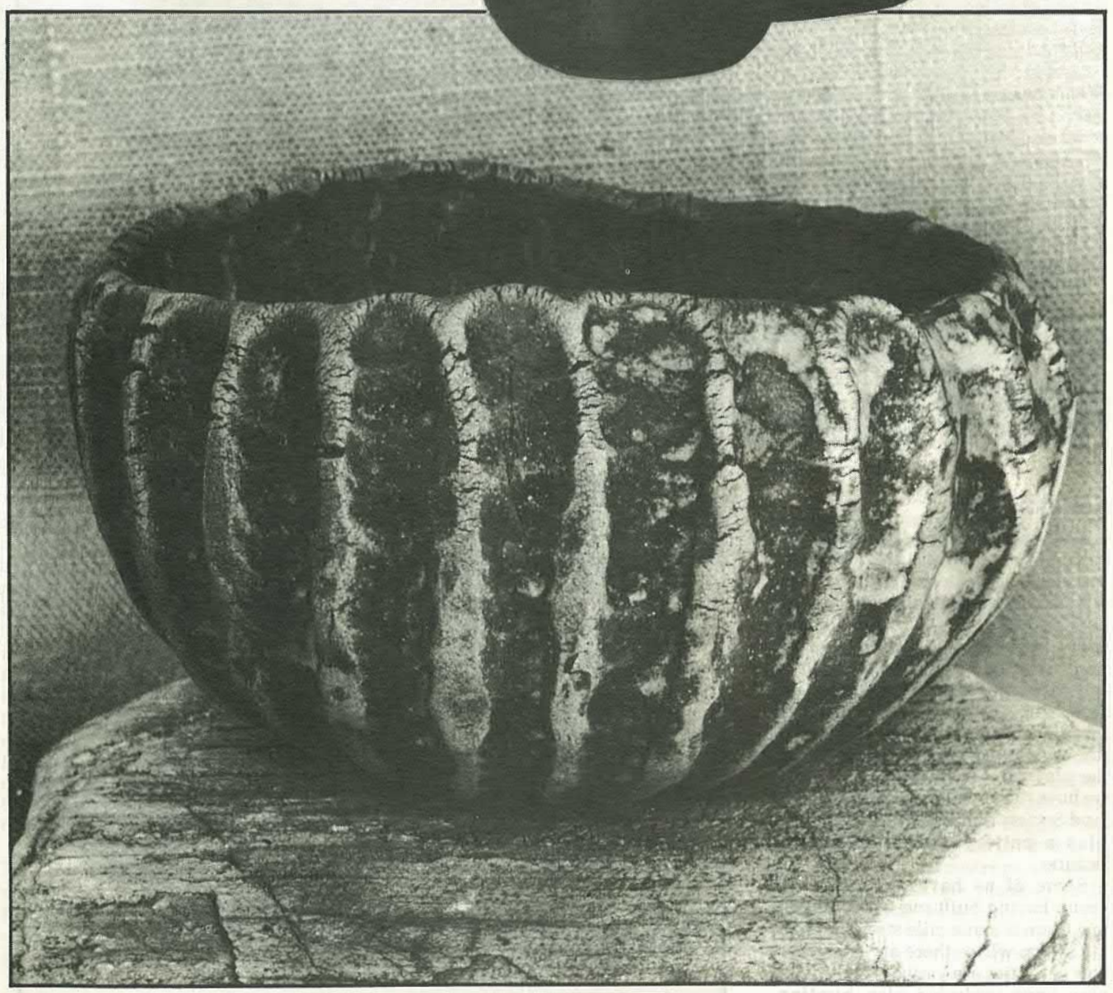
Margaret Higgs

"I make domestic ware because technical skills need repetition to maintain a standard, however I'm basically more interested in pinched and slab forms. I'm emersed in porcelain work just now — making up clays and discovering the effects of ash glazes on porcelain. Quite exciting — all this. Most glazes I use are ash glazes and I fire in an electric kiln. I work at The Studio away from domestic distractions and teach night classes at Riccarton High School."

Right: A group of pots by Micheal Trumic from an exhibition at Studio 393 Christchurch. The taller bottle is 43 cm high. All pots iron glaze fired in a reduced atmosphere, coloured grey green to bright iron red. A white line encompasses the forms. Below: Pinched bowl 25 mm (10") across thin ash glaze by Margaret Higgs.

photos Keith Nicolson





Right: Pair of porcelain pinched bowls by Rosemary Perry shown at Canterbury Potters exhibition. Below: Bottles by Margaret Higgs.

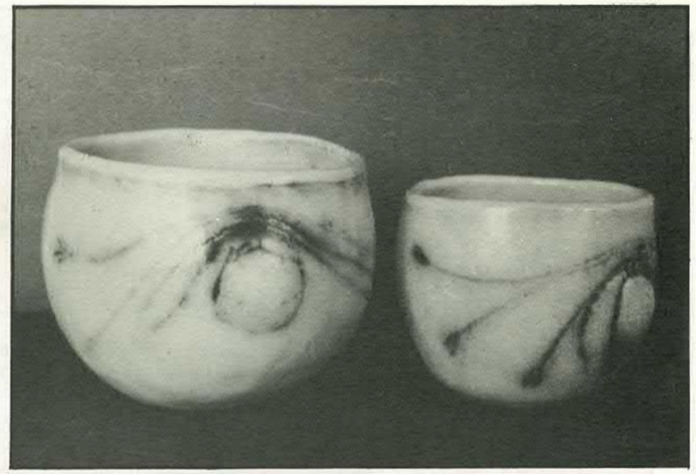
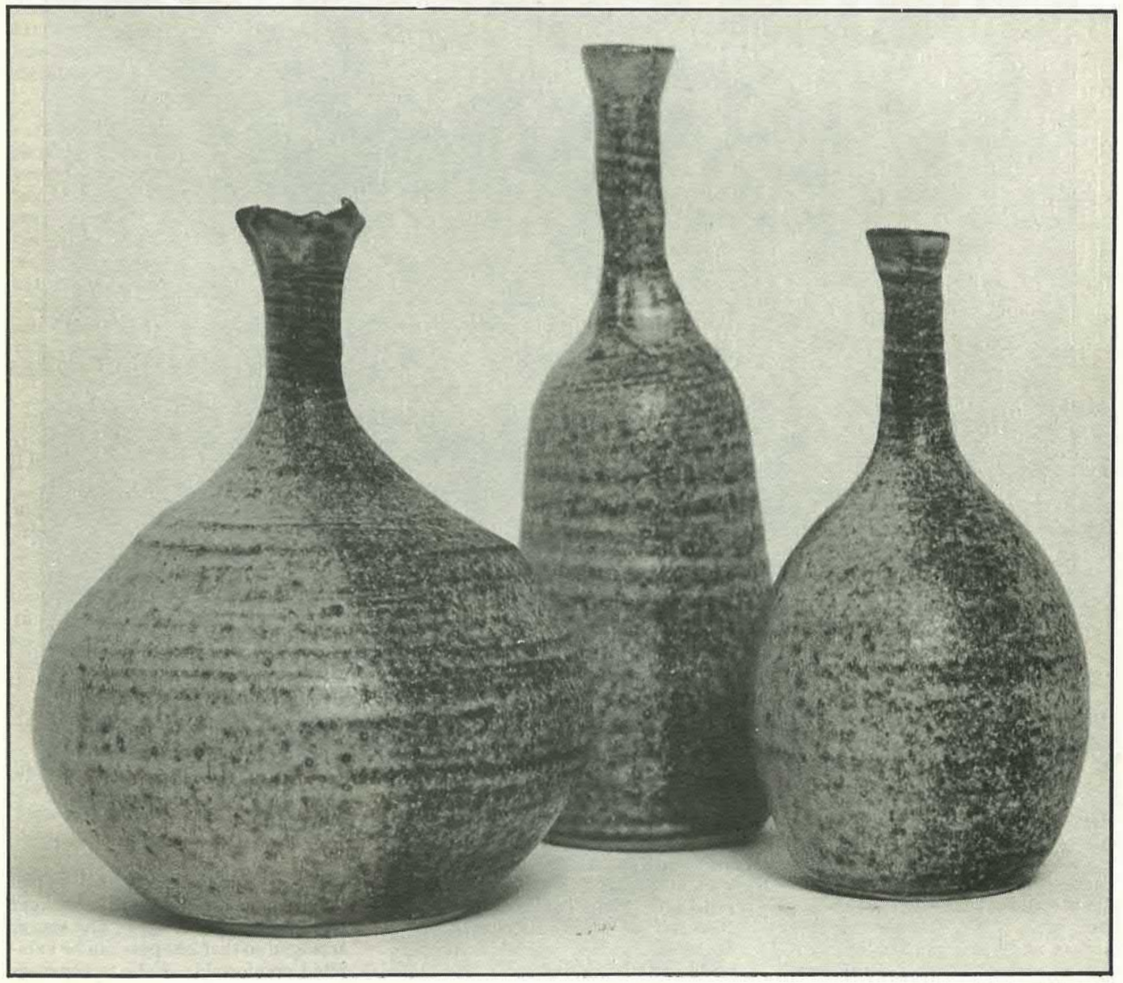
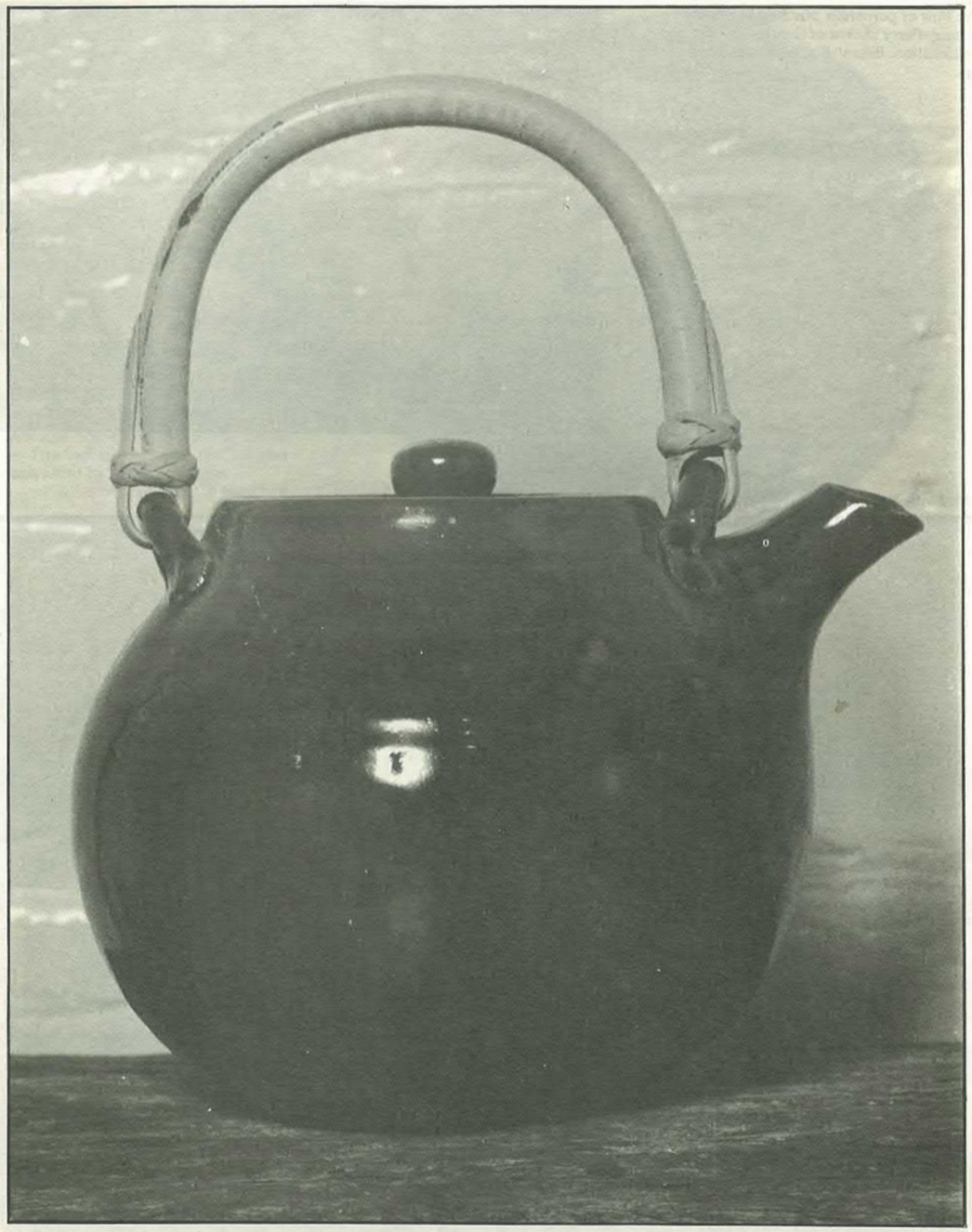


photo: Keith Nicolson





Rex Valentine

Full-time potter for five years. Teaches adult night class. Present influence Japan and the simplicity of their style. Also interested in early pottery and has organised an exhibition of 11th and 16th century South Chinese and South East Asian pots in the Mcdougall Art Gallery. Last year organised an exhibition of Hamada's pots. Organising exhibitions seems to be a hobby. Has 13 acres near Selwyn, 25 miles south of Christchurch. Here he works, grows vegetables organically and has an orchard.

Several Arts

Several Arts Gallery is small — two rooms opening into each other and one small overflow room. The area is arranged so that 200 pots can be exhibited comfortably. Gallery expenses are shared between exhibitor and gallery. The gallery takes 25% commission on sales. No rent is charged.

C.S.A.

Canterbury Society of Arts 66 Gloucester Street, Christchurch opened in 1968, has established itself as a lively place for the visual arts. There are several exhibition areas. Three galleries are suitable for one man exhibitions at $20 a day rent plus $30 booking fee. Artists are responsible for cost of invitations, catalogues and refreshments if required. Invitations posted, publicity and return freight paid by C.S.A.

Artists Quarter

"Helping to form the Artists Quarter has been very stimulating. We are working alongside a blacksmith, a weaver, a printmaker. We have settled down to making basic domestic ware for our "Top shop", but personally I find that creatively, raku gives me most satisfaction."

Denys Hadfield

"The Artists Quarter which has progressed steadily since Denys and I set up our studio there, is now offering a varied and interesting environment for work. Its full potential is not yet realised but it is growing and already it contributes to the artistic life of the city. Fifteen involved craftsmen and artists have found an ideal shared work place and have attracted a clientele which likes to buy in such surroundings."

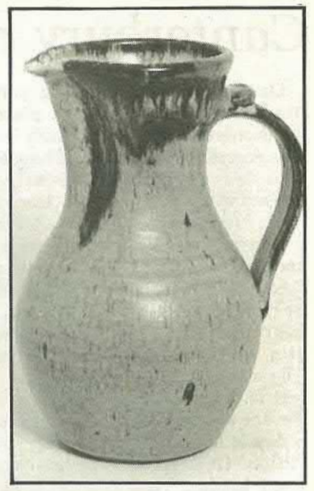
Philip Hadfield

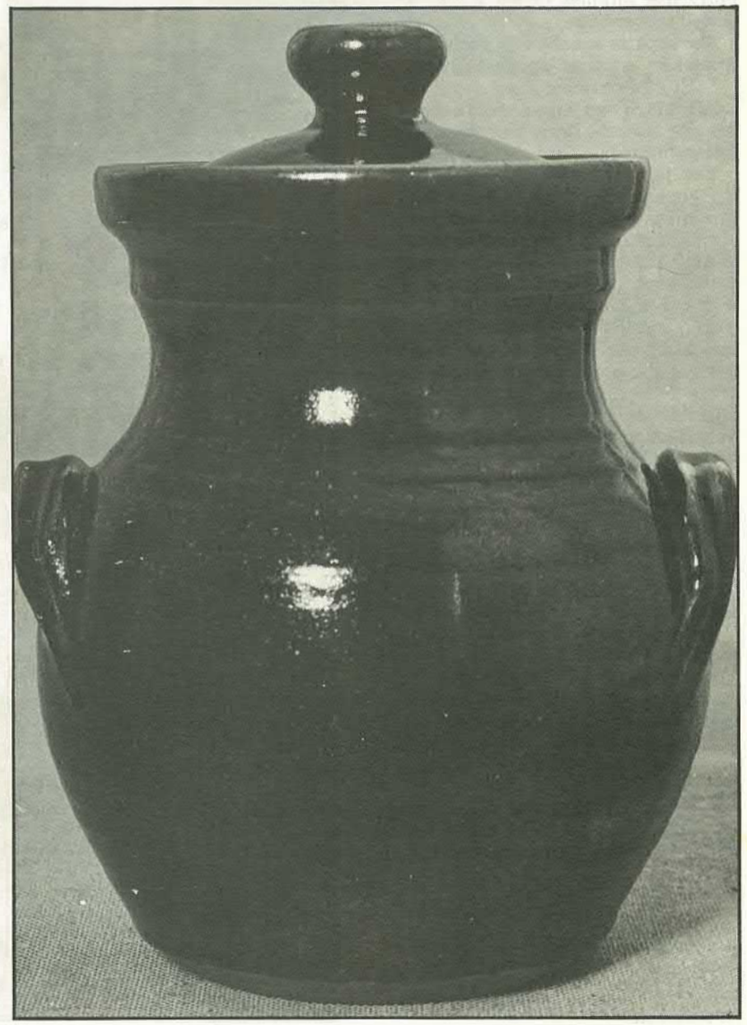
Denise Welsford

"From a range of domestic ware I most like making tea and coffee pots. Assembling them is always a challenge. Glazes are felspathic, talc and ash used with a little or no decoration as simplicity of glaze and form appeal to me most.

My suburban back garden provides space for workshop and kiln. Pots are fired in a ten cubic foot oil fired kiln to 1300° C about twice every three weeks.

I feel compelled to keep practising an acquired skill for pottery. Beauty for me is expressed more clearly in the form and shape of pottery than in any other medium."





Left: Rex Valentine
Above left: Rex Valentine
Above right: Denise Welsford
Right: Storage jar
Denise Welsford
Photos: Keith Nicolson

Canterbury raku firing

On the Saturday morning potters headed for Rex Valentine's place at Dunsandel on the Main South Road. The grounds around the old house are well sheltered and everyone baked in the sun while the pots fired, load after load, from 10 a.m. till about 8 p.m.

Denys Hadfield and Rex were responsible for the well planned firings. Raku was Denys's field of study when he received an Arts Council Grant. He has concentrated on perfecting a raku kiln which can be used in schools. The material he is now using is perfect for a portable bee-hive kiln and the one used at Dunsandel was cast in a day at his studio workshop in the Artists' Quarter. It is oil-fired and a front loader. This kiln took about thirty five minutes to reach the required temperature.

Rex built an equally efficient wood firing kiln based on Japanese design.

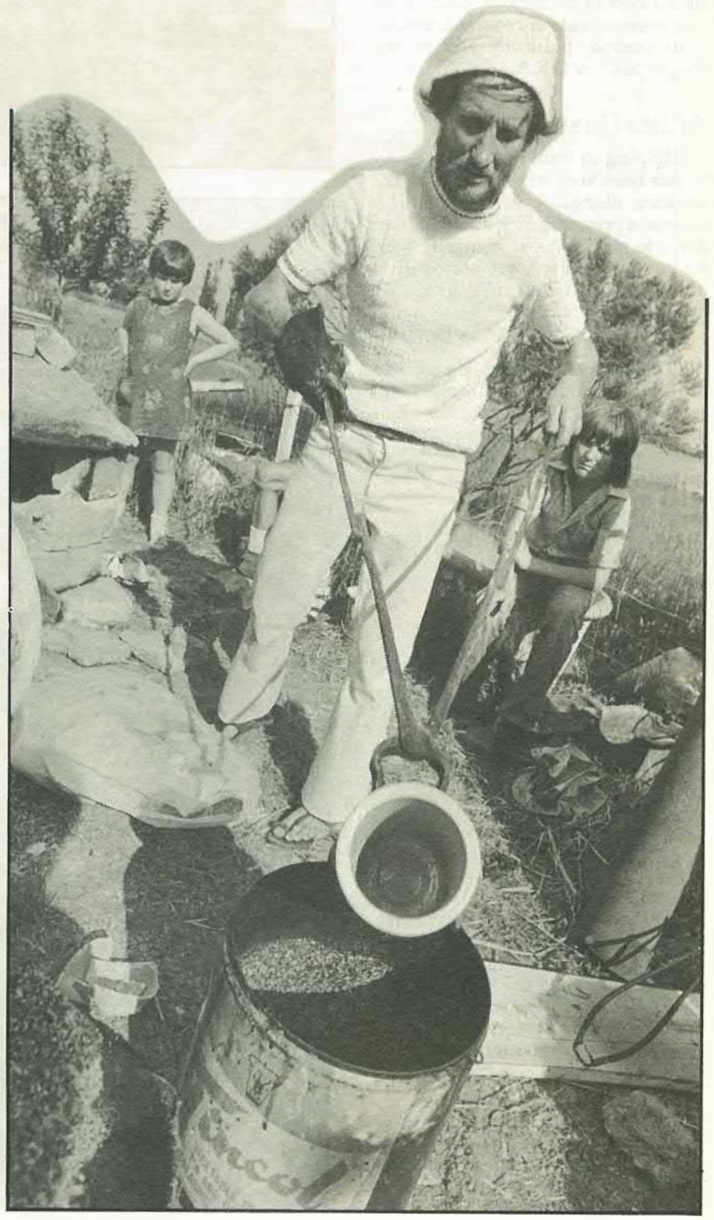
Each kiln chamber fired about six small pots or two large ones at a time, in some cases the firing time was only fifteen minutes.

The pots were lifted with tongs straight into one of three metal drums. One drum was filled with sawdust, one with straw and one with sawdust and oil. The time factor here was vital and as soon as the pots were covered with the combustible material, lids were placed on the drums and reduction took place. Then the pots went straight into water to freeze the affects of the reduction. The smoky atmosphere in the drums caused the body to turn black which is the trend in contemporary raku ware.

With a large number of pots to be fired the kilns were unloaded and reloaded as quickly as possible. The glowing pots lifted about 8 p.m. from the wood fired kiln had, we estimated, been fired at 1000 degrees C. This may seem high but there were no bubbles on these last pots which had a buttery, crackle finish.

Raku was a new experience for many and some forms were not suited to the medium. But it was a time for learning and discussion. And a time for a quick refire if the first was not a success!

Because the firings were so successful readers may be interested in the clay bodies and glazes suggested by Denys.



Denys Hadfield placing the pot in sawdust for reduction.

Raku clay body.

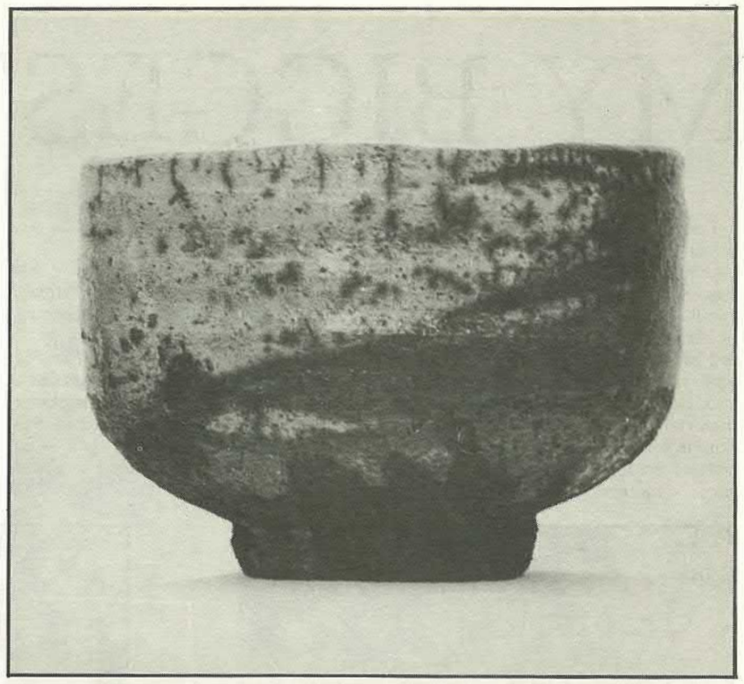
1. 70 pts fireclay (Must be white, no iron)
   10 pts ball clay
   20 pts sand
2. 75 pts fire clay
   10 pts ball clay
   10 pts sand
   10 pts talc.

Raku glaze.

1. 75% Calcium borax frit
   10% Soda feldspar
   15% Lead bisilicate
   Gum Arabic (1 tsp)
2. 75% Calcium borax frit
   15% Soda feldspar
   10% Lead sesquisilicate
   1 tsp Gum Arabic.
3. 50% Borac
   50% Colemanite.
4. 80% Borax frit
   20% Feldspar.

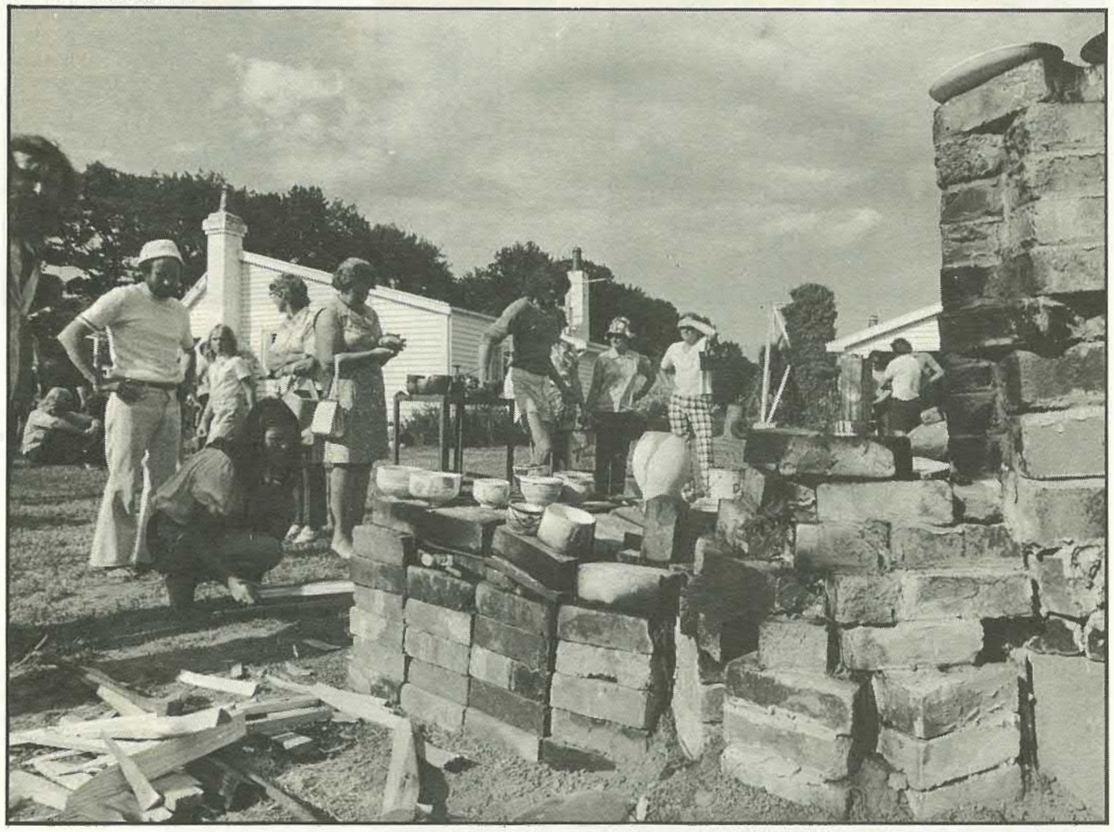
Glaze 4 was the one used on the day as some materials were in short supply.

Raynor Scandrett



Raku bowl by Rex Valentine.

Photos: Keith Nicolson



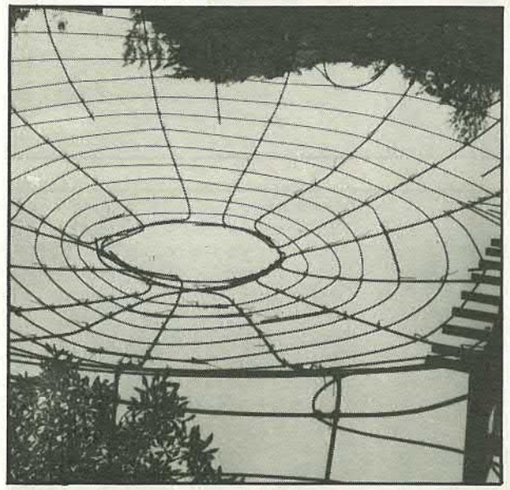
MY BIGGEST POT

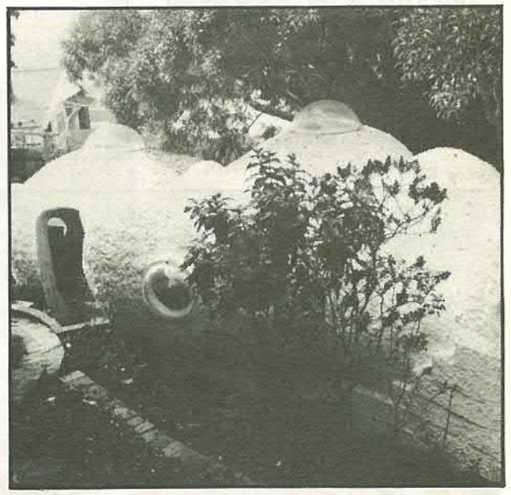
For 12 years I had worked with clay in the laundry at home and Noeline had turned wood in a space hardly larger than a cupboard. We decided to use a small area of sloping lawn beneath the Ngaio trees to build adjoining studios. We chose ferro-cement (concrete boat building construction) to build in. It has the advantage of low material cost yet gives complete freedom in form. It is an ideal material for potters to experiment with as the same structural principles they understand in forming hollow ware apply.

If we had used conventional timber framing we would have ended up with a shed about 20' x 10'. In ferro cement we were able to shape the form to press into every square inch available yet not disturb existing rock walls, brick terraces and avoid a piece of poor made ground. We also finished with a floor space of about 400 square feet.

The building was first modelled in clay then modelled a second time in balsa and wire. The City Council insisted on 8" concrete blockwork on the side nearest our neighbours and we used this also as the undulating dividing wall between the two spaces.

We dug a continuous foundation right round the perimeter and poured a reinforced concrete ring with starter rods at 1'4" centres projecting from it. ⅜ M.S. rods were securely tied onto





the starters and formed the transverse rods over the forms. ¼" M.S. rods spaced at 6" centres were used longitudinally down the form. All openings were reinforced with extra ⅜"¾ rods and all rods where joined were lapped 40 diameters. Then two layers of ½" galvanized wire netting were fixed both sides of the reinforcing. Each layer had to be stretched as tightly as possible over the form. Thousands of wire staples were pushed through the layers of mesh and twisted up on the inside to make the whole structure tight. At this stage it looked like a rather fancy bird cage.

It had taken almost two years of occasional weekend work with the whole family and often friends helping to this point. Then on the appointed day — mercifully fine — our friends, many of them potters — got plastered!!

We supplied plaster, food and grog and in about 10 hours each studio was plastered in. The plaster was applied firstly with spatulas but as the day progressed hands were found to be more effective. There seemed to be a decided preference for working on the outside of the curves

Overheard — "David when we've finished I'll hit you over the head and then you can hit me and we'll both loose our masks." The droppings from the plaster formed the binding layer for the floor. We placed the damp course over it and poured the concrete floor.

The studios were finished off by screwing the perspex domes over the openings and then painting them white inside and out.

The studios were very economical in material costs.

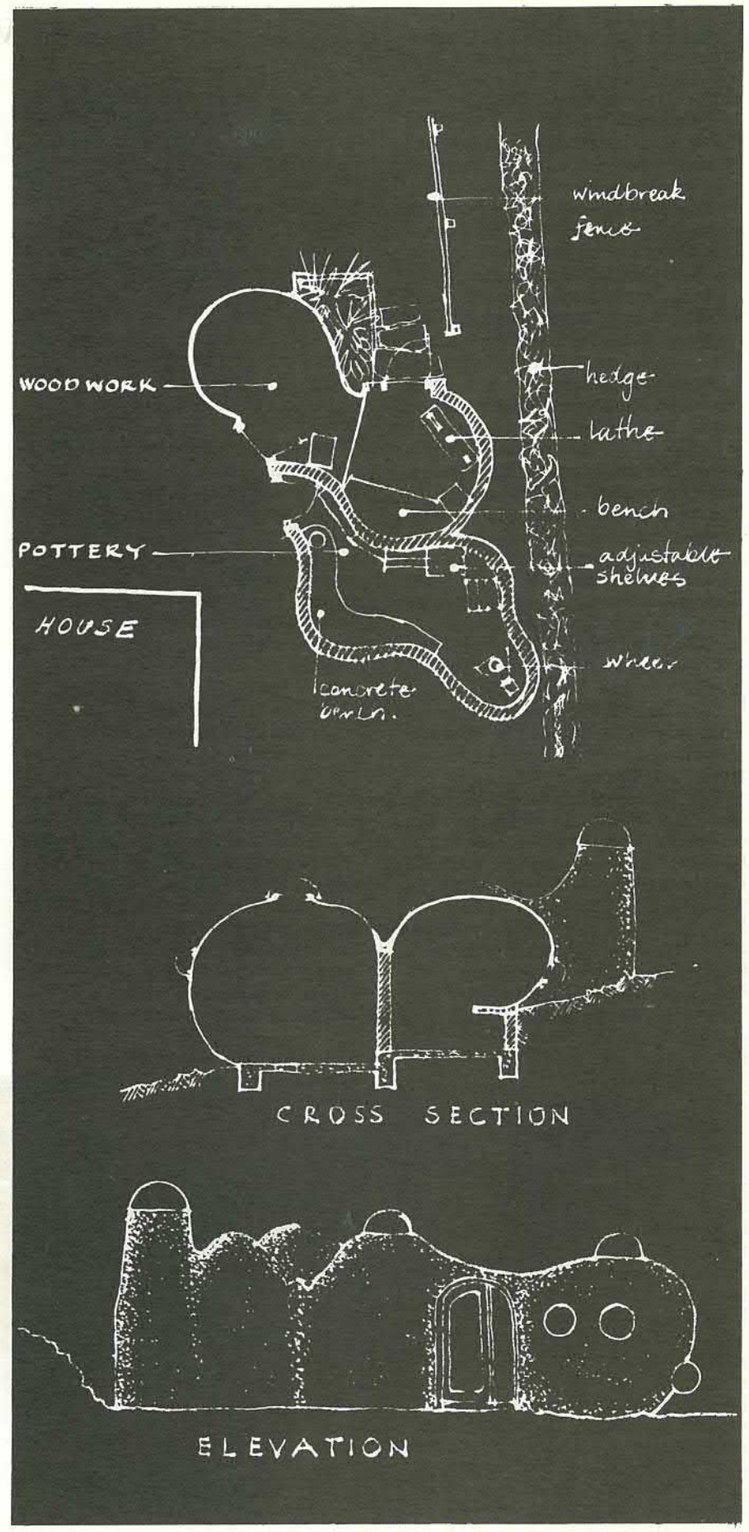
Floor Area — approx. 400 sq. ft.

Materials Cost — approx. $1200.00

Invaluable reference is "Concrete Boatbuilding" by Jackson and Sutherland.

The studios are proving exciting places to work in but as there is practically no insulation, this form of construction is most suitable for temperate climates.

David Brokenshire



China, Korea, Japan — as I saw them

Graeme Storm

Where to start is the problem when trying to make something literate out of nine weeks absolutely crammed full of sights, sounds and experiences. No doubt the five of us will often have quite different impressions and opinions about the same place, or event, and while to one member of the group a particular aspect will look large, to another it may have passed into the limbo of forgetfulness. So, on this basis, I make no pretence whatsoever to cover the field, but rather to list a few of the impressions which stand out for me personally.

In Japan, our itinerary was put together by Professor Yoshida, Director of the Museum of Modern Art in Tokyo, in conjunction with the New Zealand Embassy, based upon suggestions from ourselves as to what we would like to see. We were then hosted by various groups as we moved about the country. In Korea the itinerary was organised primarily by the office of the New Zealand Charge d'Affaires, again on suggestions from us, and in China, the tour programme was worked out by the Chinese government, the Ministry of Light Industries with broad outlines of our specific interests in mind. In the latter two cases it was not easy to plan in advance as none of us were too familiar with what the countries concerned would hold in store, or what we would actually be permitted to see. Considering all this, the tour went off remarkably well and we had interesting, if at times exhausting programmes, varying from meeting potters and visiting studios, spending time in museums and looking at private collections of ceramics, being taken to places of scenic and historical interest, including several ancient kiln sites and burial mounds, and being entertained at theatrical and musical performances. Throughout we were treated with the utmost kindness and generosity by our various hosts and constantly plied with the most incredible variety of food and drink. China is a gastronomes delight, but that's another story.

We had about three and a half weeks in Japan and covered a great deal of ground from Mashinko in Honshu southward to the Saga Prefecture on the island of Kyushu. Generally speaking, I was rather amazed at the growth of what I can only describe as the "cult" of pottery in Japan. I had always been aware of the prestige and prices amongst certain well-known potters but somehow this aspect seems to have snowballed in recent years to the point where, on many occasions, I had the feeling that the pots themselves had been rather edged out of the race in favour of the presentation and showmanship part. Now I hasten to qualify this remark by saying that this does not mean that I feel no one is making any pottery of note in Japan — on the contrary — but rather the issue is often clouded by the reputation aspect, and one has to look beyond that to get back to the actual pot again. I had not realised before just how clearly defined are the various schools of pottery and how intolerant they often are of each other. Bizen, accusing Mashiko and the Mingei of being too commercial for example. I could hardly suppress a laugh to that one, surrounded as we were at that moment by the very essence of big business. I felt often that our Japanese hosts in the various areas we visited did not really understand how it was that we could enjoy their work and yet admire and enjoy work from another different school. Perhaps this is what a long tradition, of many hundreds of years does to one's outlook. Narrows it, and makes it more inward looking? I don't know, I am conscious as I say these things that they are very broad and sweeping statements but for what they are worth, they were the impressions that were left with me.

Tamba is an area which I feel has suffered from over-exposure to western visitors. It's no longer the country pottery area it was, making the type of ware it used to. Prominent westerners have lived there, written books on the place and now its very much on the tourist track.

Onda has something of this again but to a lesser extent. There is still some good, honest, unselfconscious work being done there I felt at one of the potteries we visited. There is a Leach influence in the pulled handles and the English-type pitcher shapes but they are well assimilated which is not always the case with these things. I could not help feeling that Onda's unique water-powered clay crushers, thumping steadily away day and night, would fit very nicely somewhere into the Coromandel scene. A strange aspect of Onda was the almost total absence of any pots to buy; all spoken for prior to firing apparently.

Ming celadon bowl
From Otago Museum

We met the youngest potter of the village, Sakamoto, in the process of stoking his wood-fired kiln and learned that his annual income was in the vicinity of 20 million yen, that's about $48,000. Not bad for a country boy!

All is not countrified and folksy however. Potters belonging to the modern school crop up all over the country. An interesting group of people exist over the hill from the city of Kyoto where many of those who have worked in the Kyomizu area moved when the old wood-burning kilns of that potters district were closed down some years ago. We visited a number of small studio workships there, and saw a remarkable variety of modern styles of pottery.

Further south in the Ureshino area we met a woman potter, Mrs Ono, who had developed an intriguing technique of applying and firing gold-leaf on to her pots to achieve effects in combinations with high-keyed blue, red and yellow glazes which were very untraditional to say the least.

Then in the Mino area where there are some 1300 ceramic factories clustered around Tajimi, in fact the largest concentration in the world. Every type of ceramic product imaginable is produced. There too, are pottery museums specialising in ancient products of that area, like Oribe wares, the ruins of the old Motoyashiki kiln some 500 years old, a pottery design and technical centre, and a ceramic laboratory which provides data to potteries requiring that service.

The porcelains of the Arita area were another eye-opener for me, coming as they do from an area steeped in a long tradition of producing fine wares. A luncheon off that fine, hard, and delicately thin ware decorated in enamels of blues, greens, reds and yellows was an enlightening experience. It was all hand-made and decorated, and yet a world apart from the Mingei type of pottery.

Tokoname was an area which provided another pleasant surprise. A traditional pottery-producing district with many large factories, yet with a very lively group of young studio potters producing everything from traditional to very modern work and obviously backed to the hilt by City Hall, who carried a comprehensive display of their works throughout the large and modern building. This I noted was a feature of several areas — the official recognition by the City Fathers — and not only in displaying potter's work but purchasing it on a large scale for use in foyers, in murals and the lobbies on every floor, in the council chambers and committee rooms or perhaps in the courtyard areas outside the buildings themselves.

I would mention here, the exhibition of New Zealand pots which we took with us in the three specially designed cases which, when opened, formed their own display area. There were 50 pieces representing 22 potters, and this gave our hosts an idea of what was being produced in the way of New Zealand studio pottery. Comments in Japan varied considerably from place to place, but it was always obvious that any pieces with a Japanese influence came in for close scrutiny, and as often as not, fairly severe comment. A general feeling would be, I think, that we are rather too Mingei-oriented, and even here lacking somewhat in the genuine spirit. All the comments, whether praiseworthy or critical, were helpful and constructive and I think overall, there was a feeling of amazement that New Zealand was producing pottery of this calibre in the relatively short time, which we are pleased to call our history.

We next moved to Korea, spending time in Seoul, where we visited the ceramics departments of several universities. These, and some others we visited on our trip to the southern part of the country did not seem very adventurous or progressive to me. In fact, this could well apply to most of the current pottery being produced in Korea, with one or two exceptions. Modern ceramics seemed to be firmly wedded to the past with both potteries and departments of ceramics at the universities, skilfully though slavishly copying Koryu and Yi dynasty wares. Each university, incidentally, has its own fine collection of ancient Korean ceramics set up in a proper museum on campus. The pots consisted almost entirely of Silla, Koryu and Yi dynasty wares. We met only one studio potter in Seoul who was making pottery outside this sphere, and according to him, there would be only about ten others in South Korea doing a similar thing. I gathered that it was not an easy road this, to dare to be different.

The one bright and exuberant spot on the Korean scene was the Kimchi potteries. They make rather coarse, quickly made wares for storing the national pickle dish, Kimchi. The potteries we visited were rambling tin-roofed, earthen-floored affairs, out in the countryside with the traditional Korean climbing kilns nearby. These are long, single-chambered kilns up to 83 metres in length. One we saw, was really a chimney lying on its side on an artifically built-up slope. They are wood-fired take about a week to fire completely and hold thousands of pots, many of them quite large and requiring two men to carry them. The process of making the pots was a real joy to watch. They were all hand-built, coil and slab, with only the odd gesture towards throwing and smoothing out the added coils on a rather slow, floor level footwheel. Each stage of the pot was handled by a different person, from the beaten-out base to a low side wall, to added coils, and so on, the piece being passed on from one potter to another as it progressed. It was all very casual and yet very efficient. This was a country pottery as yet unsullied by the hordes of western ceramic lovers and the tourist trade which has had such an effect upon the Japanese pottery scene. It was good, honest, earthy stuff, made for a specific function and will hopefully, remain alive as long as the national pickle continues to be produced. Its demise does not seem imminent.

In China, things were entirely different from the other two countries. To begin with there appears to be no individual potters as we understand them existing anywhere. Logical I suppose when you come to think of it, as such freedom of thought and expression would run counter to the system. A great shame though, when you consider the long and illustrious ceramic tradition which the Chinese have and the expertise of centuries which could be tapped. What we saw then were factories producing mainly domestic wares on an automated, or semi-automated, basis. It may be hard to believe but in our entire month in China we came upon only one potter's wheel and that after much enquiring. This was tucked away in a research institute and used, I suspect, only for roughing-out experimental shapes, which were then drastically turned. Most of these factories produced porcelains, in the main rather unexciting, except perhaps those around Ching te Chen where, at their best, they rivalled good Scandanavian wares of a similar type. Decoration here was the best we saw. Each factory has its showing room where we could see the finished wares before moving around the works itself and observing processes. It strikes me that Chinese ceramic production is at the stage at present where it needs the technology and sophistication of western machinery in order to forge ahead and step up production and design quality. The machines are often outdated, and in some cases, of Heath-Robinson con-

struction, having been designed by the factory workers themselves, to do the job a bit more efficiently by removing a hand process somewhere along the line. I am not saying that this is not laudable — it is, and it has served a purpose well up to a point, but the Chinese themselves now realise that there are even better ways of tackling these problems, and are sending their own people abroad to study more up-to-date methods in the industry. What happens to the idealogy of a classless society as more and more Chinese go abroad to study and a new breed of technologists and specialists emerge, is anybody's guess. The ever increasing contacts must, I feel, make inroads, for better or worse, into the insular society that China has created by closing herself off from the rest of the world for so long. It is evident that both strengths and weaknesses have emerged from this policy and only time will tell how lasting they are — but I digress — back to the pots.

It was exciting to discover that there are still superb collections of pots existing in the principal museums throughout China. Notably in the Palace Museum, within the Forbidden City, in Peking. And also in the Shanghai Museum which has an exceptionally fine collection of Shang bronzes. One of the frustrating aspects of our stay in China was coming upon sherd heaps connected with old kiln sites while out strolling near our hotel in Yi Hsing, and observing later on that the riverbank at Ching te Chen were literally smothered with sherds at a place where the junks had traditionally loaded their wares for shipment to the coast. In both of these places we, as foreigners were a rarity, to put it mildly. Sir John Addis, former British Ambassador to China, and an expert on porcelains had been the last European to visit Ching te Chen and at Yi Hsing we were the first foreign delegation to visit for 25 years. Needless to say we attracted considerable attention, with crowds materialising from nowhere and our hosts felt distinctly uneasy about our roaming around doing flippant things, like fossicking for sherds. So we had to look with longing eyes as we sped past in our official cars.

In Yi Hsing county we came across a factory producing, amongst other things, large, very large, about 4 ft by 4 ft, hand-built storage jars. These were made in several operations. The sections being placed outdoors to stiffen up in the sun between times. Huge coils were beaten out into curved slab sections, then stood on edge on a previously beaten out base. The finished products looked for all the world as if they had been thrown, so regular were they yet a slow turntable or a person walking backward around the pot, holding a wet cloth to the rim, was as close as they came to anything mechanical. In the same factory we saw the production entirely by hand of full-sized ceramic baths. Imagine slab-building your own bath!

That the tour was successful and worthwhile, all five of us would wholeheartedly agree. Our grateful thanks go to the Ministry of Foreign Affairs for all its efforts in arranging and sponsoring the tour. Its belief and trust in the future of the pottery movement in New Zealand will I am sure, be justified. The experience was, a once in a lifetime occasion for those involved, and one from which we gained so much, both in the field of pottery, and I think even more importantly, in the business of understanding more about those with whom we share this globe.

Otago Museum collection

Although the Otago Museum's pacific collections are well known both here and overseas, they only form part of the wide variety of displays on the world's cultures. Pottery is an intimate and tangible part of most cultures and therefore plays an important part in many displays, some of which are almost entirely of ceramics. But the visitor interested in ceramics should not ignore those sections where pottery forms only a very small part of the display for it is here that clues can be discovered to some puzzling form or design in ceramics by the examination of non-ceramic artefacts. A good example is the metal vessel prototypes for Islamic moulded ware.

The museum does not publish guides to its collections so this article should serve as one to the ceramics oriented visitor.

Association of Friends of the Museum Hall (Ground Floor)

This hall contains a display on English pottery beginning with a reconstructed Early Bronze Age beaker c. 1800 B.C. and ending with pieces by Bernard Leach and Michael Cardew. Important examples in between are Romano-British ware, Mediaeval ware (a fine selection of jugs in this group), Tudor, English Bellarmines and Delftware, a chamber pot dated 1725! Wedgewood, Chelsea, Derby and Bristol figurines, Martin Bros., Pilkington, Bernard Moore and so on.

Hall of Melanesia (Ground Floor)

Most of the archaeological work in Melanesia to date has concentrated on the study of pottery and especially on Lapita ware 1200 to 200 B.C. This ware is of interest to potters for its incised decoration and forms.

In the Fijian section of the hall is a display on the manufacture of Fijian pottery together with many examples.

de Beer Display (Ground Floor)

This small display has fine examples of Hispano-Moresque lustre ware.

Egyptian section

A large number of Pre-dynastic pots (5,000 B.C.) are on display together with examples of early wheel-thrown pieces, glazed wares (faience) up to the beginning of the Islamic empire. Of interest to the potter are sherds plainly showing the quartz-sand bodies of Egyptian faience and the thickness of the glazes.

Mesopotamia

This display contains pottery sherds from Hassuna, Samarra, Halaf and Uruk covering a period from 6,000 to 3,000 B.C. Although these are only fragments they do show some surprising examples of sophisticated decoration and fine bodies.

Classical section

The Otago Museum is renowned for its collection of Greek pottery. Although ceramically speaking, it is only a refinement of techniques discovered thousands of years earlier with its soft earthenware painted in earthy pigments without a proper glaze, it does nevertheless offer a strong appeal to the intellect with its mathematical precision of shape and representational rather than decorative painting. The collection contains Early Geometric 10th Century B.C., Corinthian c.725 to 625 B.C., Attic black-figured 6th Century B.C., red-figured 5th Century B.C., Etruscan 5th to 4th Century B.C., Hellenistic and Roman pottery.

Islamic section

From ancient beginnings Islam created a new world of glazed pottery. Examples of most of the technical advances made by the Islamic potter are on display in this section. A wealth of colour, painted and other decoration can be found here, much of it from the great period between the 9th and 13th

Centuries. It also possesses a large number of sherds from Fostat (Old Cairo). What is most interesting in this section is to discover the influences that the great ceramic traditions of the Islamic and Chinese Empires had on each other. The display terminates with excellent examples of Isnik ware including tiles.

Chinese section

Unfortunately this group of ceramics is small but does contain some superb examples. If celadons are considered the backbone of Oriental ceramics, then this section is well balanced with examples of both Northern and Southern Sung dynasty pieces and one beautifully potted Ming bowl of that lovely bluish-green glaze obtained by firing celadon in a reducing atmosphere.

Apart from neolithic and early dynastic pottery, this section and the museum's storerooms contain examples of most Chinese wares.

Korean section

This is also a small section but the ceramics in it make up for the lack of quantity by their quality. Beginning with a lidded cup in grey stoneware from the Silla dynasty 5th to 6th Century, examples are inlaid celadons of the Koryo dynasty 12th to 13th Century finishing with pieces from the Yi dynasty A.D. 1392 — 1910. The two techniques developed by the Korean potters of inlaying with clay and filling stamped decoration with slip are demonstrated at their very best in this collection.

Japanese section

A display not truly representative of the culture which has provided so much inspiration for New Zealand potters. The section contains examples of Arita, Kutani, Hagi, Kiyomizu and Bizen ware as well as examples of export-ware.

Modern Japanese pottery

Perhaps in compensation for the omissions of the Japanese section, this display contains fifteen pieces by Shoji Hamada which together with some Kawai pots form almost the entire display.

The Americas

From North America there are Pueblo, Hopi and Zuni examples and from South America are Inca, Diaguita, Mochinca, Chimu and Nazca pieces.

S.E. Asia

Recently manufactured Thai village pottery both kiln and open-fired pieces form the most important ceramic group in this section.

Delftware

The display consists of Continental and English Delftware together with examples of Italian Majolica and Talavera ware from Spain.

Mellor Collection

Sharing the same display case as the Delftware is a selection from the ceramics collection made by Joseph Mellor (1869-1938) the eminent chemist and ceramist. Some pieces from the collection are on display in other sections but this is the biggest group on display. The remainder is in the reserve collections. This group is notable for the extraordinary variety of glazes as one would expect from a leading pioneer in the scientific investigation of the nature and behaviour of glazes.

New Zealand section

Jugs from back left, Shoji Hamada, Bernard Leach.
Front left 19thC Milton Pottery 16thC London. At Otago Museum

This is divided into two parts, one of which deals with the Milton Pottery which was established in 1874 and lasted until 1971. The Pottery produced a wide range of products from sanitary ware to table and decorative pieces.

The second part of the display is devoted to New Zealand craft potters beginning with some 1953 pieces by Len Castle with the most recent additions (made in 1973) being Doreen Blumhardt, Doris Dutch, Lawrence Ewing, and Graeme Storm. The museum has a policy to add to this collection regularly both the work of new potters and of those established but omitted so far.

The museum is open seven days a week, apart from Good Friday, Christmas Day and Labour Day. The hours are 10 a.m. to 5 p.m. weekdays, Saturdays 1 to 5 p.m.; Sundays 2 to 5 p.m.

Linden Cowell
Technical Officer, Otago Museum.

Red wares of China

Trevor Bayliss

The kilns of Yi Hsing have been firing for ten centuries. They are known principally for the red bodied burnished wares they still produce. Yi Hsing is five hours driving time inland from Shanghai.

European importers believed that the little Yi Hsing red spouted pots sometimes accompanying consignments of tea were for infusing tea and they led to the teapot. The first European teapots were unglazed and burnished like their progenitors.

The members of our party — Margaret Milne, John Fuller, Graeme Storm, Len Castle and myself, together with our entourage of five drivers, our permanent travelling hosts Mr Cheng, Mrs Lee and Mr Wu, Michelle from the embassy and six officials from Soochow and Shanghai stayed at a small brick hotel within a walled garden which a few years ago had been the home of a landlord.

Yi Hsing is a picture of old and new China. A canal from a lake ran beside our wall and crossing this was a most beautiful camel-backed stone bridge built during the Sung dynasty. Beside the bridge was a kumara processing factory with an unsolved pollution problem which precluded tarrying near it. The bridge was being crossed constantly by peasants carrying loads of produce. And water buffaloes with their minders seated nonchalantly on their rears. We were allowed to stroll across the bridge and scuff round in the fields beside the canal. Everywhere there were sherds of blue and white porcelain dating back to early Ming.

From sunrise loudspeakers around the commune sent jolly revolutionary music across the fields and into our bedrooms.

We visited a pottery making large red ware. Tubs with a capacity for half a ton of liquid were made by joining two huge slabs to a circular base. These were joined and shaped into the bottom half of the tub, then two

further slabs were added to form the top half and the tub was moulded and patted into final shape. The factory also made Chun ware on a dark ferruginous body. The shapes were decadent and the glazes fruity.

Then we visited a factory making the traditional Yi Hsing ware. Until now we had not seen a potter's wheel in any pottery. All wares were made by moulding, pressing or slip casting. Here we looked forward to seeing water pots and other domestic wares being thrown.

The factory was agog for our visit — the first foreign delegation ever to visit Yi Hsing, and there was little work done in the factory that day. Notices at workroom entrances welcomed Our New Zealand Friends.

After the usual short rest in a reception room drinking green tea and smoking the usual cigarettes and listening to the usual introduction by the equivalent of our factory manager, we were taken to the show room and saw some really well designed and finely crafted teapots, coffee jugs and vases. Then to the workshops. To our surprise all the wares we had been examining were made by a combination of slab work and press moulding.

The red clay is beaten flat and rectangular strips and circular pieces are cut out and stock-piled beside the potter. A slab is luted into the cylinder and with fingers inside pressing out, the cylinder is paddled into a bulbous shape. The circular piece is luted on to form the base.

The work is now placed within a split mould and the fingers are pushed out against the mould to produce the finished shape, the foot ring and the rim. The spouts are made by passing a flat steel needle through a conical piece of clay of the spout size. This is then rolled on the table producing in a second a tapering spout with parallel walls. The handle is press moulded.

Decoration is of several kinds, mainly sprigging and incising. The finished pot is fettled and smoothed with damp cloths very thoroughly and then burnished with a piece of horn. A lot of time is spent on these last two operations. Incising is done after the burnishing.

In discussion with the factory officials I learnt that Yi Hsing wares have always been made this way. What observers have believed to be throwing marks are finger marks from pressing the walls against the mould while on the turntable.

Our evenings at the hotel were enlivened with films. Together with our officials we collected in the hotel dining room and were put through the harrowing account of the slave girl's beatings by the wicked landlord for not handing over the goods. Through ten reels we watched her escape to the mountains, her hair turn white, her rescue by heroic Red Star soldier and her final qualification for office in the Red Guard.

We returned to Soochow and at the entrance to the lake were sampans loaded with cormorants sitting on outriggers — fishing. For how many hundreds of years has that scene been the same. We stopped for another of those continuing banquets. A main course was fish from the lake done up like a suckling pig with sweet and sour sauces.

Looking back at the red domestic pottery wares, there are many favourable comments to be made. The entire process is by hand although the final use of the press mould would eliminate most evidence of this. There is work satisfaction as each worker has a task with variation. The work tempo is not high pressure. The conditions are pleasant and the workers are in chatty little groups in small workshops. There is a reasonable amount of good design in the work and well developed technique.

Trevor Bayliss is Curator of Ceramics at the Auckland Institute and Museum.

Potters in Britain

A hundred and forty seven full members of the Craftsmen Potters Association are listed in a revised directory just published. With a photograph of recent work is a biographical note written by the potters themselves. Also included are marks and the names and addresses of the potter's workshops and the times when showrooms and workshops are open.

Published by the Craftsmen Potters Association of Great Britain, it can be obtained from William Blake House, Marshall Street, London W.1. for a L1.10p *international money order or a sterling cheque.*

Craftsmen Potters Association also publishes Ceramic Review six times a year. It has contributions from well known potters on techniques, gives opinions and shows trends in ceramics in Britain and elsewhere For further details write to the editors, 7 Marshall St, London, W1V 1FD. For an annual subscription of £4.00.

Yvonne Rust's summer pottery school

The dates for the three schools are:
3rd. January to 13th. January 1976
17th January to 23rd. January 1976
27th January to 3rd. February 1976

Part of the course is to look at northern clays and carry out salting tests and generally thrash out the problems of clay — there is then to be a voyage to the Poor Knights Islands which will provide the inspiration for the second part of the school which will be devoted to large pots and sculpture. You are promised some solid potting, good food, good company and plenty of swimming and sunshine in beautiful surroundings.

There is only room for 10 in each school.

Further information from Yvonne — No.4 R.D. Whangarei.

Coming potters "do" Driving Creek Coromandel

In January the potter's do will begin again on the 7th. From henceforth the date will remain the same and the events will take place from 7th to 14th of January. People are welcome to stay on for a further week or so, but nothing will be organised. A small advance party would be welcomed to help set up camp.

The main pottery workshop will be in normal use at the time, and visitors will be requested to respect the sanctity of the workshop and kiln area. I would like to see the do be more or less self sufficient. There is work space available in the barn and wood fuel, and terra cotta clay (for a small charge) for those who must make pots. For others there is the whole of the Coromandel district to explore. Proposed features include a maritime picnic as usual, a copious hangi and a technical discussion.

Again no charge will be made, but only those people and their families who are genuinely interested in making, collecting or teaching pottery will be warmly welcomed. To assist in preparations I would appreciate a note in advance if you want to come.

Bring your own camping gear. Food is available in our town only a mile away. We will provide fuel for barbecues, hot and cold water and camping sites.

Good springtime potting,
Barry Brickell.

Natural gas catenary arch kiln

Jane and Don Capon

The kiln we built in New Plymouth is a conventional catenary arch shape, 1.200 metres at the highest point, 1.200 metres wide at the floor and 1.080 metres deep.

I has a 231 mm by 231 mm chimney flue, a 3.660 metre chimney, but the grate flue which is an underground channel has been enlarged to make it 240 by 380 mm deep. (We felt we could fill it in later if necessary).

There is a small bag wall, only 231 mm of bricks high — adequate — as the burners fire from alternate ends.

The shelving arrangement consists of eight tiers of four 300 x 450 mm shelves. We will probably need a couple of 500 x 500 mm shelves for the top. We no not have a damper. A brick is simply pushed across the chimney during later stages of firing.

Construction

We used second hand firebricks of various shapes from the local gas works redundant since Kapuni, and only one layer had to be hand cut. The outside layer has insulating bricks on it (also ex gas works) and over this for extra insulation we put 25 mm of 450 °C "White Wool" and 75 mm of 343°C F.E.I. (Flexible Equipment Insulation). We also used the insulation material to help muffle noise from the burners.*

Gas Installation

The local gas authority was very encouraging at first — promising to make available high domestic gas pressure of 110 kilopascals (16 lbs per sq inch) which we have at the gate. Consequently we had natural gas installed into the house and to the kiln shelter. The next time the gas department was contacted, only 55 kilopascals (eight lbs per sq inch) pressure was available. Later, even that was whittled down to 4.5 kilopascals (⅝ of a lb per sq inch), which of course made natural draught impossible. Forced draught was necessary. Even normal household gas pressure is 1.7 to 3.4 kilopascals (¼ to ½ a lb per sq inch).

The gas engineer assisting us, Robert Mong, has had considerable experience in industry changing over from oil to gas, commissioning, manufacturing and installing burners. He has also installed other pottery kiln burners, but not for gas as low pressured as that we had been alloted. However he was confident we could reach 1300°C with forced draught with two burners.

Meter Box

We had a long wait for a larger than domestic size meter box which would take 11 kilojoules per hour at top heat.

Installation

Finally the meter box, the gas supply and the kiln were ready, the gas engineers were on the site and the pipework was connected to the main gas pipe. The gas was ignited with pilot lights for a trial. It looked and sounded fine.

Firing

The kiln was quickly packed with big terra cotta pots, the wicket was closed and the pilots lit. The temperature rose to 200°C in two hours with no trouble, so one burner was turned on with a little air. Firing continued to 600°C and the second burner with a little air was ignited. The kiln was incredibly easy to operate and within eight hours had reached 1100°C. We felt it had reached its maximum three hours later at 1160° so it was turned off.

The result of this firing proved to be oxidised and some of the larger pots had cracked. We had not reduced at all during the firing. Didn't know if we could. We also felt there was not enough "pull-through" as it took so long to increase the temperature from 1100°C to 1160°C.

An extra brick in the grate might help. So we did this for the next firing. We had a full bisque for the second firing. We started in the same way allowing the pilot to take the temperature to 200°C. With natural draught and then with the burners and air on in a balanced measure she soared up to 700°C, started gasping and finally stuck at 820°C.

The perfect bisque was unpacked the next day and the grate spaces were measured. There was only 57 square inches of area instead of at least 81! Two bricks were hauled out. The bisqued pots were rapidly glazed and the kiln repacked. Never have pots been glazed so quickly.

Nick Brandon helped with this third firing. He stacked while I loaded. He had some of his big beauties which helped fill this largish kiln. At 1 p.m. with the kiln stacked and ready we lighted up. At 300°C we turned on both burners to full gas and air. There was no holding the kiln this time. It romped away and the firing was completed by 8.45 p.m. which included a soaking period of ¾ of an hour. Cones 9, 10 and 11 were down at the top and bottom of the kiln.

We found the kiln easy to reduce, and yet it still climbed rapidly. Nick simply turned the air back and placed a brick over the chimney. There is no mistake when reducing with gas. Little tongues of flame come out of the spyhole and every small gap in the arch. We didn't realise how many gaps there were.

The result of this firing was excellent. We got plenty of good Papa rock glaze, copper red, blue and a good Chun glaze.

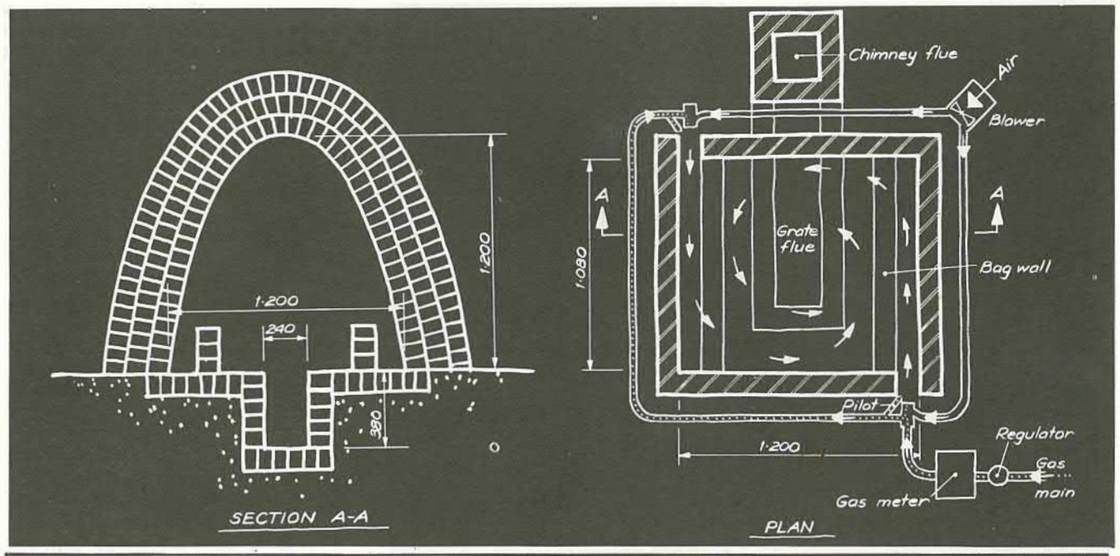
Nick spent the time he wasn't regulating gas/air sunbathing and saying how easy it all was. I can't help feeling that the kiln knew Nick wasn't going to stand any more nonsense and responded to the hand of the more expert pyromaniac.

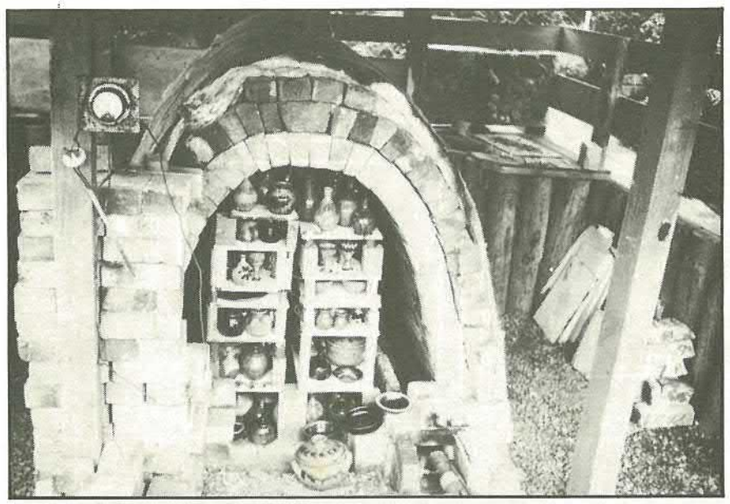
So now we have a low pressure natural gas kiln of moderate size operating successfully.

What you need (as from the quote from Robert Mong.)

Scope: Supply all burner equipment and install on kiln and commission. It is generally agreed that a maximum input of between 11 and 15 kilojoules an hour is required. Controls to be manually operated.

Supply: One R.M.L. (Robert Mong Ltd) single stage turbo fan complete with 0.75 kilowatt single phase motor to deliver maximum 3.5 cub metres a minute at 2.5 kilopascals.





Showing kiln stacked, wicket opened, pots on grate mature, position of burner. Front pyrometer and probe inserted each firing Back pyrometer and probe left in situ. Blower behind wooden posts at right back.

* Two 50 mm R.M.L. Butterfly valves with handle and graduated scale.
* Two 32 mm R.M.L. butterfly valves with handle and graduated scale.
* Two R.M.L. gas/air proportioned mixers, sized for 6.3 kilojoules maximum and nozzles.
* Two R.M.L. gas/air pilots.
* Fittings and pipe work
* Labour (Fuel must be installed by gas engineers).

Gas Department
* Install pipe from road frontage to kiln
* Provide meter box capable of 11 kilojoules
* Provide regulator for 5.0 kilopascals.

Safety Requirements: Because this kiln is built with a shelter over it (no solid walls) the only safety devices required by the local authority were pilot lights. These are kept on at all stages of the firing. We also keep a fire extinguisher handy, too.

We recommend gas as a fuel for pottery kilns for ease, cleanliness and for excellent effects in reduction glazes. The cost is competitive with oil now oil costs have increased. A bisque and glaze firing costs about $18.00.

* F.E.I. is fibreglass. It comes in large pale gold bats 1500 x 1200 mm and 100 mm thick. It is flexible and we bent it over the arch of the kiln. We used chicken netting to keep it in place. I have found it excellent to insulate the kiln and help muffle the noise created by the forced air system. White wool also a fibreglass from Winstones comes in large bales and can be bought by the pound for around 60 cents. I used this over the top part of the arch of insulation bricks — the F.E.I. over this. It will stand temperatures of 450°C.

Noise. There is some noise created by the ignition of gas when using a blower system. The blower has been insulated with "Bats" fibreglass insulation and a box built around it. We use F.E.I. over the burner ports and this has reduced the noise too.

Roy Cowan's wedging machines

Potters must have the ability to hand-wedge clay, but after the first few tons they may become resltess! Where there is the space (and, perhaps, a suitable pair of feet), the shallow concrete saucer four feet across, the Clay Tramping Pit (Fig 1) may suit.

The machines described below may be built in a choice of methods according to resources available, and in a range of capacities, but care must be taken over the basic design and over the relation of power supplied to speed, because of the intensity of the plastic flow problems.

Fig. 2 isolates the basic dimensions from constructional details in a vertical feed machine. In essence, a 1-in. shaft, driven by belting to a large pulley fixed at the top, and firmly held by two well-spaced bearings, passes downward on the centre line of a 4-in. bore tube or square casing. Within the tube the shaft carries five blades cut from 1-in. x ⅛-in. or 3/16-in. steel, fixed at 35 to 40 degrees inclination. The casing is closed around the shaft at the top, but not to form a bearing, and the top blade sweeps about ⅛ in. below. The lowermost blade is placed so that it sweeps ⅝ in. below the foot of the shaft. The other three blades are fixed at equal spacing above to produce an interrupted screw, two blades to one side, three on the other. This particular arrangement makes cleaning of the casing easier.

The casing is open for 6 in. at the top front, and is formed outward to make a feed ramp. At the top, a swinging trapdoor is hung upon a withdrawable pin. The trapdoor carries a firmly fitted arm, made of ¾-in. steel bar or equivalent pipe, 15 in. to 18 in. long, ending in a cross tee of about 8 in., a handle.

The trapdoor and arm are set up so that, as the handle is drawn downwards, pressing clay on the ramp into the mill, the movement is stopped by the arm touching the ramp, before the door swings within range of the rotating blades. Never push clay into the mill by hand!

The Drive

The power source is assumed to be an electric motor turning at 1440 r.p.m. If the vertical plan is adopted, this must be a ball-bearing model — the sleeve-bearing type is not suited to running on end. Where the clay requirements are not large, the motor can be as low as 1/3 h.p., and the drive belts should be arranged to give a reduction of between 10 and 8 to 1, so that the mill shaft turns at from 144 to 180 r.p.m. At such ratios, two stages of belt reduction will be needed, with a countershaft, a unit which can be assembled from stock shafting and bearings, or

which can be purchased as a unit. To secure 8 to 1, a 10-in. pulley is fixed to the mill shaft, belted to a 2½-in. pulley on the countershaft (4 to 1), and from there, 6 in. down to 3 in. (2 to 1). Both motor and countershaft mountings will need sideways adjustment to tension the belts.

If the motor power is increased to at least ¾ h.p. and preferably 1 h.p., a single-stage belt drive, 2 in. on the motor and 12 in. on the shaft, giving 6 to 1 and shaft speed 240 r.p.m., is possible. This represents about the highest speed at which this type can be driven without unduly heating the clay. Owing to the short arc of contact on the 2-in. pulley, the belt drive must be doubled. Should a stone be fed in with the clay, slippage will occur at the small pulley.

An alternative drive may be arranged using a light car rear axle unit (Fig. 2). One axle shaft is removed and the outer casing on this side is cut off and sealed. On the other side part only of the casing is removed and a new bearing is fitted, to leave enough of the axle shaft projecting to form the auger. The blades are welded in place. A motor mounting may be constructed on the ex-axle. This arrangement produces a very robust machine, and the actual power absorption of the driving parts is less than that of multiple belts. The axle should be lubricated with grease for vertical operation. One example of this type with an axle of 5 to 1 ratio, and an overall ratio of 7½ to 1, will deliver up to 700 lb. an hour, with a ½-h.p. motor. Mounted on a wall, the machine produces a fair volume of noise, which should be a consideration in siting.

Construction Details

Successful versions have been built in wood, the casing being in 1-in. plywood or coreboard, with main members in 4 in. x 2 in., and large wood screws and black steel nuts and bolts for fastenings. If a welder is not available, the auger blades may be cut from 1-in. x ⅛-in. angle steel (sketch) and be secured to the shaft by ¼-in. engineer's bolts, a small flat being first filed on the shaft to improve the seating.

The least costly form of bearing is the plain bronze plummer block, but the pair must be well aligned and be bolted to a hard surface. A 1-in. shafting collar is fixed below one of these to prevent the auger being forced upward. A shallow indentation should be drilled in the shaft to receive the set screws of the collar. Likewise, the set screws of the pulley at the top should be inset into the shaft, since they may

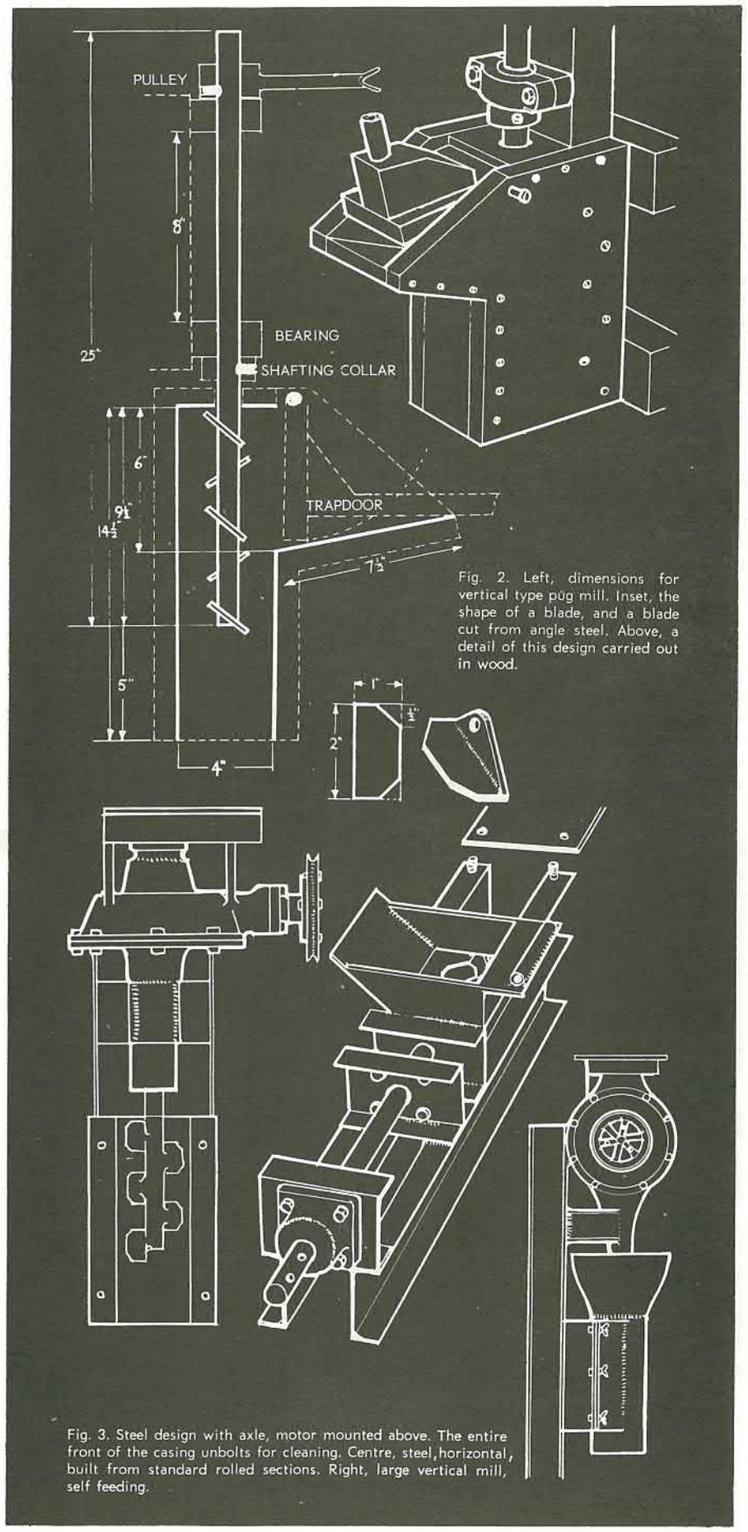


Fig. 2. Left, dimensions for vertical type pug mill. Inset, the shape of a blade, and a blade cut from angle steel. Above, a detail of this design carried out in wood.

Fig. 3. Steel design with axle, motor mounted above. The entire front of the casing unbolts for cleaning. Centre, steel, horizontal, built from standard rolled sections. Right, large vertical mill, self feeding.

be dragged under the heavy torque loads, scoring the shaft and rendering disassembly difficult. The bronze bearings should be fed with grease when operating.

At a rather higher cost, the bearings may be a standard ball-bearing unit such as the SKF Unit Pillow Block number SY100. These are free running, less troublesome as to lubrication, and self-aligning.

As a smooth sliding surface is requisite inside the casing, the wooden type should be lined with metal, either aluminium or the thick zinc used by photo engravers. It is not necessary to line a steel casing with non-ferrous sheet, but the inner surface should be smooth and free from corrosion.

The limitations of wood lies in the amount of twisting that occurs in the more highly powered models, and for these steel is more suited. A construction is shown for a steel model which can be carried out largely in standard 4-in. x 2-in. channel section, with some 3-in. x ¼-in. flat strip. This one is designed to work horizontally, with the trapdoor swinging sideways. The plate covering the out-going portion of the casting is made removable to allow cleaning. The bearings shown are called Unit Flanged Housings, but the cheaper bronze plummer blocks may well be used.

As the inside dimensions are increased, the feed and flow problems ease, and machines can be built which will accept clay without ramming. The final sketch shows a vertical type of heavy construction, powered at from 1 h.p. upwards, with a casing tapering from 10 in. to 6 in. Clay is thrown into the top in lumps, and is self-feeding. The machine is made up with large-size standard pipe sections, a substantial axle unit, and structural steel.

When first started, these machines tend to throw out chopped clay. If the outlet is covered for a moment, a solid plug will form and smooth feeding will follow. Any roughness, especially accompanied by high feed pressure, will probably be the result of roughness within the casing. Normal plastic clays should feed smoothly, but a breaking tendency may occur with very short clay bodies.

This article is reprinted from vol. 9/2 because we have received many requests for the information.

Problems with stoneware clay bodies Driving Creek Pottery

Naturally one wants to use the clay down in the paddock right beside the workshop. I assumed that the fine, white, plastic clay in my new place would be like the yellowish white clay I have been using successfully for over ten years. It took us a year to realise the hard way that with some local clays beauty is only skin deep.

We began to loose larger pots from biscuit "dunting", i.e. fine radial cracks forming especially around the base and sometimes right up one side. Sometimes the cracks would be visible only on the outside. They claimed between fifty and eighty percent of all large pieces such as casseroles, crocks and large bowls.

Everything was tried. We read of silica phase changes causing sudden volume increase at about dull, red heat, but had difficulty in proving this to be the cause. We tried a wide variety of different grogs, some high in alumina, some based on river sands; all with the same results. I made dozens of test bars for comparative shrinking analysis, threw with techniques to avoid possible throwing stresses, made large test pots by the dozen and still the biscuit dunting plagued us. We observed that the cracking seemed to be taking place during the cooling rather than the heating cycle, and also discovered that by increasing the temperature of the biscuit firing cracking was substantially reduced. We also observed that our fine, white, plastic clay left out in the rain for long periods, would break down on the surface with the exposure of fine white sand. So began a new approach — the gradual replacement of the local clay by known, proven ones such as Huntly fire clay and Hyde ball clay.

Over the next months crocks were made, gradually reducing the local clay content to find out just how much we could get away with. Again, after many failures we found that to include more than about 10% of local clay was risky.

Strangely enough our local yellow terra cotta clay was not so badly behaved. We can use 80-60% of this in bodies fairly safely, despite the fact that it does carry free silica. Perhaps the iron helps to reduce the cracking problem by partially combining with the silica. Cardew adds quartz grog to some of his bodies, so maybe the degree of fineness of the silica particles is the major factor.

These problems bring to mind my experiences of some years back with salt glazing. Again I had little trouble with the local clay, presumably because there was no biscuit firing. The pots were raw glazed and taken up to full temperature in the one firing, eliminating the dunting problem.

I believe that as the ware is subjected to the higher temperatures, much of the free silica combines with the alumina to form mullite, and this is a stable substance. The free silica can also cause the ware to be very brittle (hard yet fragile) after firing due to an enemy called *christobalite*. The path then is laced with snags and regrettably I have to admit my ignorance in this field. I must have sold a good number of pots which although perfectly well fired, were more brittle than they should have been due to the formation of *christobalite* at glost temperatures.

A radical change of approach to the clay bodies we were using was now obligatory. We discussed the problem at length and finally ordered several tons of raw Hyde ball clay from Central Otago. Also we began to use Huntly so called "fireclay" to replace local clays. This fireclay is evidently a low silica kaolinitic type material which shows more vitrification than our local white clay at 1300°c.

The Hyde clay is also low silica, high alumina material which vitrifies at cone 9 and has a pleasing small iron colouration, and above all is beautifully silky and soft to throw due to the fine mica particles.

Our present domestic ware body mix then is as follows:

local clay (white)	40	
Huntly fire-clay	240	
Hyde ball clay	120	parts by dry weight
New Zealand feldspar	80	
grog (pot sherds)	60	

This body causes no problems in the firing or drying and is pleasant to handle in the workshop. It's local clay content is just under 10%.

For smaller domestic ware the blunger is fine seived, but for larger pieces we find the best textural effects to be given by the choice of fireclay particle size rather than grog. The Huntly fireclay is a dense almost rock-lime material as are many of the

fireclays associated with coal seams in the Waikato and is supplied in ground (FG) or air floated form. The ground form contains particles ranging up to ⅛" size whereas the air floated grade (AF 30) is very fine. The particles do not easily slake down in the blunger and what is retained in the seive we re-cycle through the pug mill for bulk crock and planter mixes.

I feel that there is much offering for the potter in the Waikato fireclays, as they contain slaking and non slaking kaolinite of good purity although usually coloured dark grey due to carbonaceous matter.

Nevertheless our experiments with local Coromandel clays will continue as we get to know more about the technical limitations, and as I get around to installing more machinery for crushing, grinding and mixing the raw materials. As our machinery is steam-driven, using wood fuel, it is pleasant to work alongside and the power may be infinitely varied according to the job to be done.

Pugged bodies

The above stoneware body recipe is of course put through the blunger and slip direr, and is without question a dense, strong body for domestic ware. For larger items such as bread crocks, big jugs and storage pots. We tend to prefer pugged clay as it is much quicker to turn out in bulk. We have evolved two crock bodies, one light coloured and the other a darker firing one, which I hope will suit salt glazing when we get the kiln built. The formulae are as follows:

white crock body
10 Hyde (wet)
5 Huntly FG (dry)
3 Tiki river sand (local)
1 NZ Feldspar

dark crock body
16 local yellow clay
8 Hyde
1 Huntly brick grog

Again as with the blunged body, we are cautious with the use of local siliceous clays, and hope to increase the local content in due course. The increased proportion of FG fireclay provides the texture.

Finally we pug a terra cotta clay body of the following mix:

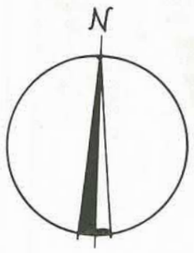
local yellow clay	6	12
Hyde ball clay	1½ or 3	very approximately
Tiki river sand (local)	3	6

All these body mixes are at last pretty well resistant to dunting. The Hyde ball clay is a splendid material to use and slakes down well with water.

We do not yet sell clay or clay bodies. The information given now is offered in case it may be helpful to others.

Barry Brickell

From an exhibition of tiles at Alicat Gallery Auckland, Charles Holmes on wall left, Howard Williams table front, and Jeanne Holmes zodiac sets above. Free shaped tiles at the back Jim Greig. Wall plaque left Ted Dutch.
photo Gay Stewart



Bay of Islands – * Black Sheep, Kerikeri

Whangarei – * Yvonne Rust, Parua Bay

Coromandel – * Driving Creek Potteries, Barry Brickell
** other country potteries

* Albany Pottery Shop, main road north
* New Vision Gallery, Her Majesty's Arcade, Queen St.
* Alicat Gallery, Jervois Rd, Ponsonby
* Brown's Mill Market, Durham Lane, open Fri, Sat.
* Carl's Craft Shop, St. Heliers Bay, open Mon – Sat 4pm
* Auckland Museum Ceramic collection

Auckland

Rotorua – * Scholes Gallery

Lake Taupo

Hastings – * Kumaka Pottery, Bruce & Estelle Martin Valentine Rd, Bridge Pa open 9 am – 5 pm Mon. to Sat.

* Wairnea Potteries, Richmond, Jack Laird
shop 9 am – 5 pm Mon. – Fri
workshop 1·30 – 3 pm Fridays only

* Teal Valley Pottery & Weaving Loft,
Christopher & Philippa Vine,
14 K on Blenheim Rd.
open weekdays 9·30 – 12·30 & 2 – 5 pm
* other country potteries

Richmond

Nelson

Te Horo – * Mirek Smisek

Waikanae – * Reikiorangi Pottery, Wilf & Janet Wright
open 11 am – 4·30 pm Tues, Wed, Thurs, Sat,
or by appointment

Wellington – * Wellington Settlement, Willis St
* Media Gallery, Karori Rd
* Van Helden Arts & Crafts, Days Bay,
open 7 days 11 am – 5 pm
* Dowse Art Gallery, Lower Hutt.

Lewis Pass

Arthurs Pass

Mount Cook

Haast Pass

Lake Wanaka

Queenstown

Lake Te Anau

Lake Manapouri

Christchurch – * Several Arts Gallery, Colombo St Nth
* C.S.A. Gallery, Gloucester St
* McDougall Art Gallery, Botanic Gardens
* Artists Quarter, Tuam St.

Washdyke – * Colonial Gallery
Timaru

Dunedin – * Otago Museum collection
* The Connoiseur, George St.
* Dawsons Craft Gallery, Princes St
* Whare Flat Pottery, Beryl Jowett
open weekdays 10 am – 4 pm
weekends – take pot luck!

We are publishing this potter's geography to save writing dozens of itineraries for visitors who want to know where to see pottery, where to buy good New Zealand pots & where they can visit a potter at the kilnside. This is not a complete survey; it can be regarded as starting off places where visitors are welcome.

a potter's geography

KW

Cristobalite formation in New Zealand stoneware bodies

Ian Firth

There are two basic causes of dunting (cracking or shattering) in New Zealand stone body clays.

Firstly the 'quartz inversion' which is the volume change in the crystal of silica (1%) which occurs instantaneously at 573°C. Too rapid heating or cooling at this temperature is the cause here, and the answer is obvious.

The second cause, and the one to which this article is devoted, is the formation of excess cristobalite, which has a volume change of 3% within the fired body. This volume change is an expansion, on heating, and contraction, on cooling, at a temperature of 220°C.

Cristobalite is a crystalline form of silica which starts forming during firing from 1050°C to maximum temperature and during cooling from top temperature down to 950°C. It converts from the 'free' silica in the body — the 'free' silica being that part which is not intimately combined with other materials such as it is in feldspar and kaolinite.

Some free silica is present in most clays, but many New Zealand clays contain an exceptionally high percentage. The finer the particle size of the silica the more readily it converts to cristobalite. Coarser and sandy grains do not readily convert.

Some cristobalite formation is necessary to obtain a glaze 'fit'. (The contraction of this material at 220°C on cooling makes the body 'shrink' throwing the glaze into compression — glaze having good strength if in compression, but none if in a state of tension).

Other factors relevant to the formation of cristobalite are:

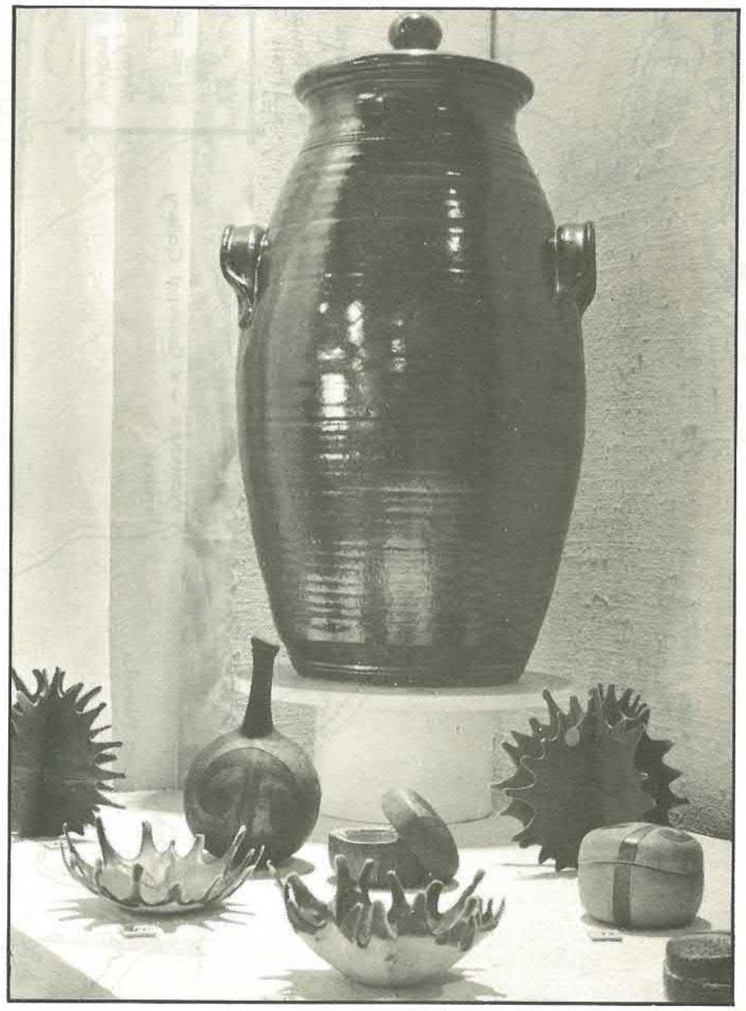
* The presence of iron or lime acts as a catalyst in its formation.
* Montmorillonite (bentonite) type clays, being of very fine particle size, release enormous quantities (up to 60%) of free silica.
* Halloysite clays, which are quite common in New Zealand, are great cristobalite formers.
* Reduction firing increases the formation.
* The longer and harder the firing, the greater the conversion.
* During the formation of mullite ($3Al_2O_3.2SiO_2$)

However, there are some brighter aspects to this very real problem of compounding good stoneware bodies from New Zealand clays.

* Mullite, which forms from the dissociation of kaolinite from 1000°C up, is in the form of needle-shape crystals, which act as reinforcing, adding greatly to the fired strength of the body.
* The fluxes in the form of feldspar and /or nepheline syenite absorb some of the free silica and convert it into silica glass. Silica glass may be thought of as the binder flowing in between and around the particles bringing about vitrification and the shrinkage that goes with it. Silica glass is dimensionally very stable at all temperatures.
* Not all of the free silica converts to cristobalite in any firing schedule.

Excess cristobalite manifests itself at best by 'chittering' of the glaze, at worst by shattering. It is the result of enormous strains set up within the fired body due to shrinkage.

Sometimes this shattering will occur immediately upon opening the kiln. Occasionally, hours, or even days later, the extra strain of a bump, the expansion from hot water or the heat of an oven, will trigger off the collapse of a pot, even though it may have appeared quite sound when taken from the kiln. The pieces from these pots can be snapped with surprising ease.



To sum up: Some of the causes of excess cristobalite formation are:

1. Too much free silica present in the clays.
2. Proportion of montmorillonite or halloysite clays too high.
3. Too much iron in body.
4. The presence of lime.
5. Too slow heat rise from 1050° and/or too slow cooling from top temperature down to 950°.

The answer lies in —

1. Using base clays with a high ratio of alumina (about 30%) or those with a high mica content. (Mica converts readily to mullite also).
2. Together with enough feldspar and/or nepheline syenite to form silica glass. (Nepheline contains only two molecules of silica to each feldspar's six, making it more silica 'hungry'). Confluently with mullite, forming enough cristobalite to give a good glaze fit.
3. Base clays should not contain more than an absolute maximum of 4% iron.
4. If the problem is minimal, a more rapid heat rise from 1050°C to maximum, and rapid cooling (keeping up the air blast after turning off fuel) down to 950°C may suffice.

Instead of feldspar/syenite, the use of rhyolite (pumice) can be beneficial, acting in the raw state somewhat as a grog, giving a mechanical as well as chemical benefit, and increasing the safe firing range.

A recipe which has proved satisfactory with great fired strength and glaze fit properties is:

Huntly H.F.30	55	(30% alumina content)
Huntly F.G. 30	5	(30% alumina content)
N.Z. Ball clay	25	(30-60% alumina content)
Silica sand (through 40 mesh sieve)	5	
Yellow ochre	¼	
N.Z. Feldspar	10	

The quarter of one percent additional iron content gives a warm toast colour in reduction.

This recipe makes a high quality 'basic body' to which other favourite clays may be added to further improve throwing qualities, but the basic body content should not fall below about 70% of the total, to maintain fired qualities.

Left: Group of pots by Chester Nealie of Auckland on display at Alicat Gallery. Right: Adrian Cotter's exhibition at Alicat Gallery Auckland.
photos: Gay Stewart

The Davis's return

Peruvian Technology Harry Davis Style

G.W. Billington

To listen to the Harry Davis lecture on engineering technology as applied by the practical potter under the severe limitations of rural Peruvian conditions was, to a present day local engineering lad such as myself, a deep breath of fresh air.

His direct and uncluttered approach to manufacturing in metal without the benefit of modern tools and machines was like the persistent drop of water that wears away the stone. This persistence, associated with his gleeful and happy descriptions of his methods and accomplishments, made a notable and entertaining lecture.

The Davis approach was not that of the mariner, shipwrecked on a desert island coping with the situation, but rather of the mariner who is fully prepared for the day when he may be shipwrecked, for Harry Davis had tried and tested all his methods at home in Nelson before his Peruvian adventure.

He knew he would need a means of cutting steel plate ⅛" thick and 8' long by 4' wide into panels, strips and circles for the manufacture of blowers, pulleys and pugmill parts.

Conventional methods being inappropriate due to the lack of facilities and prohibitive costs, Harry reverted to the age old practice of "weaken and break". To cut straight pieces he would score the plate along a line on both sides of the plate using a file sharpened as a tool and using angle iron for a guide. Circles and discs were similarly prepared using a drilled hole as a centre point, a short length of angle iron as a radius arm with a file tool clamped to the required radius. Patience and care were required to cut the grooves up to one third the thickness of the plate. The weakened plate was then gripped firmly in a vise, close to the groove and then flexed to and fro until a fracture started in the groove. Continuing in this manner, repositioning the plate so that further flexing would finally fracture the plate for the full length of the grooves.

Harry hastened to assure his audience that the desired result was achieved much more easily and quickly than they were likely to expect.

Now that he had the means of cutting up steel plate into usable pieces, his next requirement was to shape them to suit his needs as parts for assembly into blowers, pugmills, pulleys etc. He described how he made a three roll steel rolling machine from one inch diameter bar in wooden bearing blocks and the handle of an old wringer. The completion of this machine meant that he could now roll the steel into circles and tubes for pugmill barrels and pulley rims.

The assembly of the various bits and pieces was Harry declared, quite a problem. Many of the items required welding and the nearest welder was in the nearest town with a blacksmith, something like 150 miles away. Obviously these trips could only be made occasionally when the necessity of essential supplies warranted the cost and time. When these occasions came around, Harry would gather up his bits and pieces for welding which he would have previously prepared. How? By glueing the various parts together as they would be when welded with Araldite. Thus he had no great difficulty instructing the Peruvian welder and no time was wasted.

If round steel shafting required reducing in diameter, the lack of a lathe did not daunt this persevering potter. He devised a means of using a grinding wheel of the "cutting off" variety and with guides clamped into place fed the bar while rotating it by hand, past the spinning emery wheel, continually adjusting his guide blocks to reduce the shaft diameter until the desired result was achieved and he could get his bearing or whatever was required.

Harry concluded with a description of a roofing tile press he had made. He told us he was never stuck for a die but if he required a longer thread on a bolt he simply filed a cutting edge in the side of a steel nut and case hardened it.

vited schools and the general public to join us and contribute to the project. As a result all our advertising was sponsored by interested local bodies outside the society.

To watch Harry at the wheel and see the harmony between the man, wheel and clay was an experience to remember. The afternoon's demonstration drew a crowded gallery of 300, and Harry was so gentle and generous towards this audience. One came away with the feeling that there was a dedicated person who was prepared to give not only of his time, skill and money but his very self. He practiced the beliefs he held so deeply.

When in the evening, again to a capacity audience, he stood before us without a note in his hand and proclaimed with the voice of a modern prophet that we, the privileged owe a debt to the world, one felt humbled and honoured to be able to share in even a small way in such a project. The heart of Harry's and May's desire is to restore to these exploited peasants the dignity of labour with a just recompense for their work, to teach them the skills of producing a product acceptable to the residents of Lima, thereby creating and restoring a balance between the privileged and these peasant people. To Harry and May this is not only a dream but a workable scheme bought to near completion by their vision, skill and sacrifice.

The films showed clearly what has already been done and endured before funds ran out and they returned to New Zealand to carry out this lecture tour.

As a follow up we had our Raku field day at Frankley School to add the proceeds to our contribution. Perhaps something of the spirit of Harry rubbed off on us for everyone worked together with one thought in mind and the fund was greatly enriched. We realise how important it is that the last stages of the project are successfully completed with enough people trained to carry on supplying pottery and roof tiles.

YOU HAVE OUR SUPPORT

Agnes Pelham

For those of us who had the good fortune to see and hear Harry pot and lecture, the experience will remain long in our memories.

When the visit was mooted, the New Plymouth potters decided that the wider Harry's and May's message could be spread the better. So we in-

a New Zealand Government grant of $3700.

As a personal experience it was also a momentous event in terms of generosity and hospitality and friendliness. At the outset many commiserated with me for the intensity of the schedule that lay before me. I was not too alarmed at this, having done this sort of thing before. In fact the kindliness and generosity that I met with was a gratifying experience and a tribute to New Zealanders, as was also the efficient organising effort which lay behind it all. The preparatory work of organisation done by the Society of Potters and the various regional potters groups was indeed impressive.

Everywhere I went I met sympathetic and attentive audiences and I was pampered at every turn so that at the end I was not at all exhausted and after a short rest I was ready to repeat the performance in Australia.

I can only say on behalf of May and Nina and myself and the Izcuchacinos as well — Thank you all very much — you were all quite wonderful.

With best wishes for Potting in New Zealand —

Sincerely

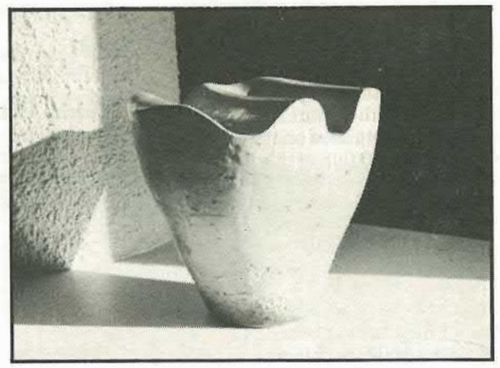
Harry Davis.

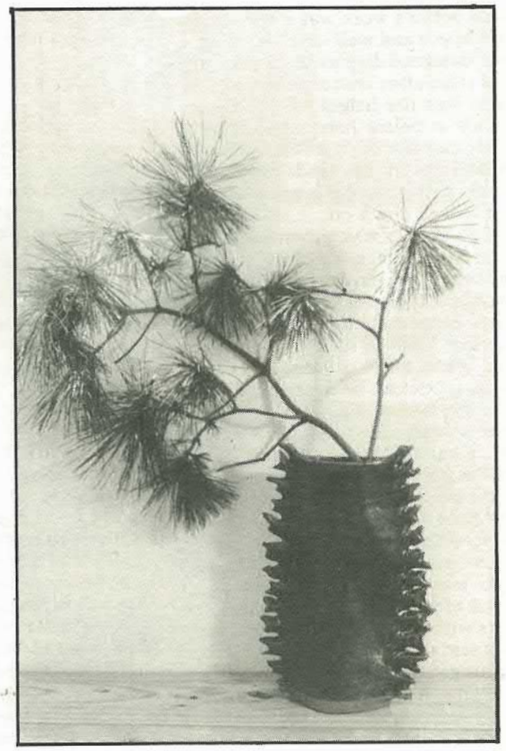
... and for our part we thank you Harry Davis — hundreds of interested people throughout the country have enjoyed watching you work and benefitted from the demonstrations of your skill and experience — and we have marvelled at your stamina and your dedication. We were pleased to be able to help in some small way and wish you, May and Nina every success in your venture.

John Fuller

for New Zealand Society of Potters.

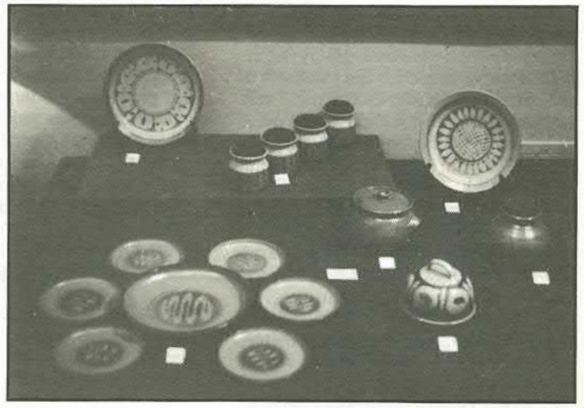
Right: Nola Barron's sculptural piece 270mm (11") high. White matt glaze with blue overtones on top surface, exhibited at Canterbury Potter's Association 1975 exhibition. Below: Casserole with spoon holder and warmer from Yvonne Rust's exhibition in Christchurch. Below right: Pot with iron glaze and torn edges by David Brokenshire 270mm (11") high. The single branch of pine needles was an appropriate embellishment for a vase for mid-winter floral arrangements, the theme of an exhibition at Several Arts Gallery, Christchurch.





1st National Earthenware Exhibition

Invercargill, August 1975



Pots by Olwyn Dykes.

"The Southland Potter's Association was formed in 1971 to foster and promote ceramics in the province. Owing to the remoteness from the general potters' scene, one of the association's aims is to broaden outlooks and stimulate activities. To this end it has invited New Zealand Society Potters, who work in earthenware, to exhibit collectively for the first time. These members have selected their own exhibits, and a most colourful and interesting viewing has resulted."

So reads the catalogue introduction to this exhibition in the Southand Museum, and the Southland potters are to be congratulated on the conception and presentation of this first-ever nationwide collection of earthenware. Organisation was good and the opening functions went very smoothly, helped by the warm southern hospitality, whitebait and Bluff oysters.

The 171 items were displayed on areas of dark brown textured fabrics and circles of white polystyrene, with plenty of room between each piece. Each potter's work was set out in its own space and well labelled; in all, a well designed display. A mistake, one that is too often seen at pottery exhibitions was the height of the display stands at below knee level. It obviously means more work and money to build some of the stands higher, but many pots must be seen side-view, not looked down on.

The colour was provided by the pots themselves, or should I say, much of it was provided by Podmores, Wengers, Blythe & Co. Stoneware addicts decry the too often slick commercial look of earthen wares; the high gloss, toffee colours, lack of textural subtleties, or a certain factory blandness that does not excite the more clayey clay-users. This exhibition certainly had a fair percentage of this commercial feel.

It was intriguing to discover that the pots which were interesting in concept, decorative treatment and glaze innovation, were also the best pots technically from a craftsman's point of view. In general it was those pots with the easy commercial glazes that also showed heavy throwing, bad turning, ungainly shapes or ill proportions. It also proved that earthenware has far more potential than many potters would credit.

Charles Holmes's tiles were excellent; showing competent design and control of earthenware glazes.

Anneke Borren was outstanding for her total individuality, and inventiveness with form that was carried out with precise throwing and superb brush decoration of overglaze oxides. Her design sense, balance of positive and negative areas, and relationship of decoration to pot shape, is something all potters should look at very carefully before going into brush decorating.

Olwyn Dykes showed pots of a more conventional nature, but strong in form, and well complimented by equally strong wax resist decorating. Her attention to detail was good to see — her corks topped off her storage jars perfectly. Elsewhere in the exhibits one saw corks used merely as bought-in stoppers, without much thought being given to the aesthetic total of the pots requiring them.

Francis Fredric also displayed a strong feeling for thrown shapes. She had a most successful casserole, sherry set, curry set and platter. All her pieces are well thrown and well glazed. Other earthenware potters would be well advised to look at her glazes, and then re-evaluate their own. Good pots can too easily be visually destroyed by the multiple reflections from high-gloss glazes. These need to be handled with great sensitivity to work well.

Patti Meads produced the highlight of the show for me in her two small spherical boxes. These were made in a way which Hiroe Swen recently made popular in this country, Patti has adapted the technique in a very pleasing manner. Her goblets, bowls and tea set demonstrated her fine throwing and glazing, and the free-form and Ikebana pots were well conceived and executed, though I feel the oxide and crackled clays of these would probably have been better in stoneware. The lower temperature of the earthenware firing and lack of reduction, left them just a little too raw to be completely happy.

Nancy Barnicoat also showed competence in her glazing and attention to details of finish, and all her work was high fired enough to give a good ring when tapped. There is nothing worse than earthenware which is left porous and chalky in the body through underfiring.

Victor Middlemiss gave his usual examples of excellent technical control, but for me his combination of high-gloss finish and classical style in shapes leaves the total rather sterile and impersonal. His "bottle family" was more interesting and his ideas in that direction are worth extending.

There were other worthwhile pots in the exhibition, Dorothy Ewart's feathered slip-trailing; Mari Tothill had some well-glazed plates, though I felt her cups were spoiled by the strap handles; Margaret Radford's matt glazed spice jars were good.

At the bottom end there were certainly many pots that would not have been in the show, had it been selected. I hope not to be over-critical, but I do feel that many potters in the New Zealand Society would benefit if they were much stronger on self-evaluation of their work, before they send it in to an important exhibition such as this one.

Thank you Southland for so ably organising and presenting this show of Invited N.Z. Society Earthenware Potters.

Howard S. Williams

TIHEI MAURI ORA!

Helen Mason
Tokomaru Bay, East Cape

Have you ever looked at a Maori meeting house purely as a work of art? We are so blinded by familiarity that it takes quite an effort to realise just how much skill and artistic sensibility go into the making of such buildings.

Here where I live in the village of Tokomaru Bay on the East Coast of the North Island in Ngati Porou country, we pakeha are a 10 percent minority and we have to mind our manners. In this small area there are three maraes in constant use, each with its own excellent carvings, painted rafters and woven tukutuku panels. As well there are several family maraes which I haven't seen, used mostly at Christmas or on special family occasions. For the uninitiated, a marae consists of a piece of land dominated by the meeting house, where meetings are held and visitors sleep on mattresses on the floor, with head to the walls so that the middle is clear; and a dining hall and kitchen, where incredible quantities of food to feed great numbers of people are produced with most efficient team work. On many of the older maraes there is also a pleasant little church (usually Anglican here) surrounded by a graveyard reserved for the kin of the marae. The whole place has a most intense meaning for those who belong to it.

Recently I attended a school function held in the dining hall of the large formal marae here, and spent a pleasant evening enjoying and identifying the patterns of the tukutuku panels all round the walls, woven most skilfully in flax, all of which had meaning for the people in the hall. Even the cream and green painted kitchen had a riot of "korus" (bulbed motif probably inspired by tree fern) over the door panels where someone had used the two colours with great freedom.

Shortly after this I realised there was much activity going on at one of the smaller maraes I walked past every day on my way to the shops and that what I had thought was a newly built hall, was in fact a new meeting house and was now blossoming with red, black and white panels, new pieces of carving were being set in position every day, and tukutuku panels woven in black, red, yellow and white plastic were being used in a way I had never seen before. The

photo: Ans Westra

whole effect was lively, modern, and cheerful, and quite surprising. I was delighted one day to be invited in to help with the painting of one of the rafter boards with black and white kowhaiwhai pattern. The work was all being done most efficiently in the dining hall behind the new meeting house. There were cardboard guides for the patterns to make sure they matched up, plenty of good brushes, paints and tools; there was a carver from the city lending a hand; and the caretaker of the marae, who up to then I had only seen actively mowing lawns, was making sure everything was done correctly and was obviously an artist in his own right. There were people coming in and out, much cheerful chatter and cups of tea, but the actual workers were concentrating on the job in hand with real dedication. I found this most necessary when I worked my way down the 12 foot panel — the pattern was intricate but most satisfying to do, and they all said I must bring my "mokopuna" (grandchildren) to see it when it was placed in position.

It is good to live among real craftsmen, the skills and knowledge are still all here, brought out when there is need to use them. As I work at my pottery spinning and weaving, the people are really interested, and can quickly pick up the finer points of what I am doing. In fact, the crafts as usual, are a means of real communication.

It has been a long trail that had led me to this village. First Japan (through Leach) and the incredible impact of Japanese pottery on this untutored colonial mind. Then actually getting to that country and experiencing the depth of such a foreign culture. After that Fiji, and the surprise of uncovering such skill in handling clay and making pots in the same ways that had survived since the Stone Age. And here again this strangely familiar culture which seemed a less sophisticated version of many Japanese customs — shoes off at the door, sitting and sleeping on the grass mats on the floor, and drinking Kava in a way which reminded me of the Japanese tea ceremony. Back to New Zealand and the realisation that here we had in our midst what was to me a foreign culture which I little understood. Fortunately, Auckland where I was living at that time, is a mine of useful information, and I was able to glean enough background information to make me aware of what I wanted to find out by actually living in a predominantly Maori community. I've been here ten months now and find it

fascinating. Life here is dynamic; nothing is ever neutral. Most contacts consist of little tests to see what game the pakeha is playing, and then, if you pass, a great gust of laughter. Did you know that it's good manners to take your shoes off at the door of most Maori houses, and *always* in a meeting house? Have you ever seen a woven flax floor mat actually in use? Have you heard the Maori language with all its vigor and intensity used for daily communication as it is here?

It is the family link that makes the home village so important to the Maori people living in the cities. In the Christmas holidays everyone comes home — the place is overflowing with relations. Tired grandmothers complain bitterly about the number of "mokopuna" landed on them (and love every moment of it too — "they are my heart" says one old lady as she shoos them outside with her stick.) "There's always a bed and a welcome here" says another old lady as her grandson calls in on his motor bike.

You can see how important it is that these roots should stay healthy and the people here in good heart. The Maoris as a race can still use their hands, and unlike most of us, the work of their hands comes straight from the heart. If we in our pakeha arrogance belittle what they do we will be the losers. There is much they can teach us about family relations and togetherness, and many other things. The other day I heard one handsome old lady stand up on a marae and say to a group of pakeha visitors in ringing tones "You have pakeha-ised us all these years — made us learn your customs — now let us try to Maori-ise you!" "Quite a job", I thought, "but we will be the richer if they do!" As I see it, what is needed is an acknowledgement by us that the Maori people are different, and have a right to that difference; an understanding and appreciation of the things they do better than us; and a lot of what the Maoris call "aroha" — love in the broad human sense.

Helen Mason held an exhibition in the Centennial Hall, Pakiri Kiri Marae, Tokomaru Bay, East Coast in September. "I have long been interested in patterns that have real meaning. I began to study Pacific art and have come to the realisation that here in our own country we have people who are aware of and are still making patterns of significance. I enjoy living with the Ngati Porau people whose patterns are a direct link with their past. I decided to put my work to the test and see if it had any meaning for them."

Warwick Lidgard at Media Gallery

photos Ans Westra

Albany village pottery

Albany village, just a few miles north of Auckland, on the main highway, has recently seen the opening of a new specialist pottery shop. Eleven well-known Auckland potters, have combined their individual talents to form the Albany Village Pottery.

Potting still in their own studios, they are supplying their work to this co-operative and are personally attending on a rota basis, so that each day, one of the potters is available, not only as sales staff, but also to discuss pots or pottery in general with their customers. In this way they hope to have more personal contact with the people interested in their craft, and at the same time provide a selection of pottery of high standard. The first two months would seem to indicate that the venture will be a success.

The potters concerned in this group, who spent much time and creative effort in preparing their premises, and in formulating a workable system of operating the co-operative, are Peter Lange and Peter Oxborough from Kaipara Flats, Howard Williams from Silverdale, Barbara Hockenhull and Ian Smail from Redvale, Margaret Symes whose studio is in Albany, and from various North Shore suburbs, Mary Harwick-Smith, Charles Holmes, Warwick Lidgard, Chester Nealie and Ray Rogers.

On its opening day the group staged a "happening" which included demonstrations of throwing, and a continuous raku firing which produced much sought-after medallions, designed as souvenirs of the day.

Howard Williams

Capricorn

Capricorn Gallery in Gloucester Street is well lit with electric beacon lights which can be directed to the display. Exhibitions are held regularly. The cost is $25 a week and the gallery takes 20% commission on sales. Opening night costs are also met by the exhibitor.

Bay of Islands

The Bay of Islands Arts Festival will have its third exhibition on the Waitangi Marae from January 19th to 22nd 1976. The festival attracts big crowds of holiday makers and residents. Established potters have supported the festival. Anyone wanting information should write to Martin Visser, R.D Ohaeawai, Northland.

Auckland studio potters craft centre:

Work has been under way for some time now in an effort to provide the Auckland Studio Potters with a home of their own. A house has been transported to a site in Onehunga to obtain committee rooms, library and workshop space. An ambitious programme is being organised to provide day and evening classes in pottery, lectures, demonstrations, seminars and weekend schools. The Centre will be open to members of the A.S.P. and to the general public, starting this September with Doris Dutch and Brenda Turner as its first part-time tutors.

There's a little shop in Kyoto

For years I have been told by New Zealand potters visiting Japan about the little shop in Kyoto which sells an incredible range of pottery brushes.

On a recent visit to Japan, as my time for leaving approached, I became feverish thinking about this potter's mecca with its walls lined with boxes of brushes, Japanese writing pencils, mops, dogs hair, soft camel hair, springy pony mane. Imagination was running riot.

So I travelled the route from Tokyo to Kyoto on the New Main Line. A quick shower at the hotel and straight to the telephone. With help from the office staff I arranged to meet one of the most respected potters in the district. He would lead me to that little shop.

In the dull and smoggy morning I was greeted with all respect and formality. A tea ceremony was followed by a long chat about mutual acquaintances amid a collection of pots worthy of a museum. It was an enjoyable morning and I left in high spirits after taking photos of all the families of people and pots. Down the road I realised the ommission. Brushes. Where?

Back at the hotel I dashed to the phone to get the vital information. But the ready help I'd received previously was strangely lacking and I wondered if the solemn and imposing gentleman standing behind the clerk could be a reason. I soon found out that he was the hotel manager — but he was also a potter!

Three minutes later with a slip of paper bearing the address I was dashing across the city in a taxi — my goal in sight. After we had travelled up and down the same road three times, I paid the metered fare and continued the search on foot. I saw a dark shop with bags of something inside — and then a glaze sieve — and stilts — and cones! Hopes were high as I entered. I was shown six large brushes.

Later after some furious sign language I had a map and I was racing down alleyways and across bridges, dodging stalls bearing tasty morsels, confident that I was near my goal. Food must wait for more important things. I stood at the door of a little shop and entered with reverence to find a counter covered with a wider range of brushes than I'd ever seen before. Sign language enquiries told me that some were from a horse's mane but where others originated from was beyond the scope of our language.

I hailed a taxi for the hotel where I enjoyed a large drink feeling tired but triumphant. The hotel manager strolled over to enquire about the success of my quest and after viewing my purchases said, "You can get those anywhere".

My spirit was consoled by the knowledge that I had bought excellent brushes at a fraction of today's normal price in Japan even if I had failed to find THE little shop.

If you are going to Japan and are visiting Kyoto, and someone tells you that there's a little shop in Kyoto that sells the most wonderful pottery brushes, don't listen unless he will lead you by the hand to the door.

Gwyn Ace

Preserving Ascot Terrace

Many potters live in old buildings which they cherish. Conservation of what is worthwhile is part of the craftsman's makeup. We asked Gillian McGregor President of the Thorndon Society to describe what is being done in a corner of Wellington to preserve a whole urban area.

The "village within a city concept" is what it is called. Its a new label and it fits. It always has fitted one small area of Wellington — Thorndon.

Thorndon is a surprising suburb. At one end it still has grand, really grand old houses. That's the northern end. Wooden and "pretentious stone" — a label for the technique of applying moulded concrete over brick to make outer walls look as though chiselled from mother nature. At the south end is a polarisation. Here close packed on a "whaleback" (geological term. Have you signed the petition to save the whale?), are a number of worker's cottages — originally all wooden. Armed constabulary houses, two rooms, toilet added on, bathroom added on and washouse added on. The lean-to is the norm in the area. But it has charm. And it has survived — five and a half acres of it — from the motorway and property redevelopment. Close to the city, high density housing on a small scale, historic, predominantly 1870 — 1880 construction. A remnant.

In this part of Thorndon there is vital community feeling. Neighbourliness extends to stray cats becoming pets, a washing machine shared and dried out between times to make sure it doesn't rust, a food buying co-op.

The Thorndon Society is the committee end. Not that the place needs it to function, its the fighting-trying-to-save end, and frankly it hasn't saved anything yet. But its a changing group of people who keep on working, restoring and paving, demolishing, working closely with the Wellington City Council Town Planning Department.

Zone E is a new zone proposed by the Wellington City Council. A great move, not only because it protects small domestic buildings, but also because it is designed to save a whole area — to have people living in a district of history book houses.

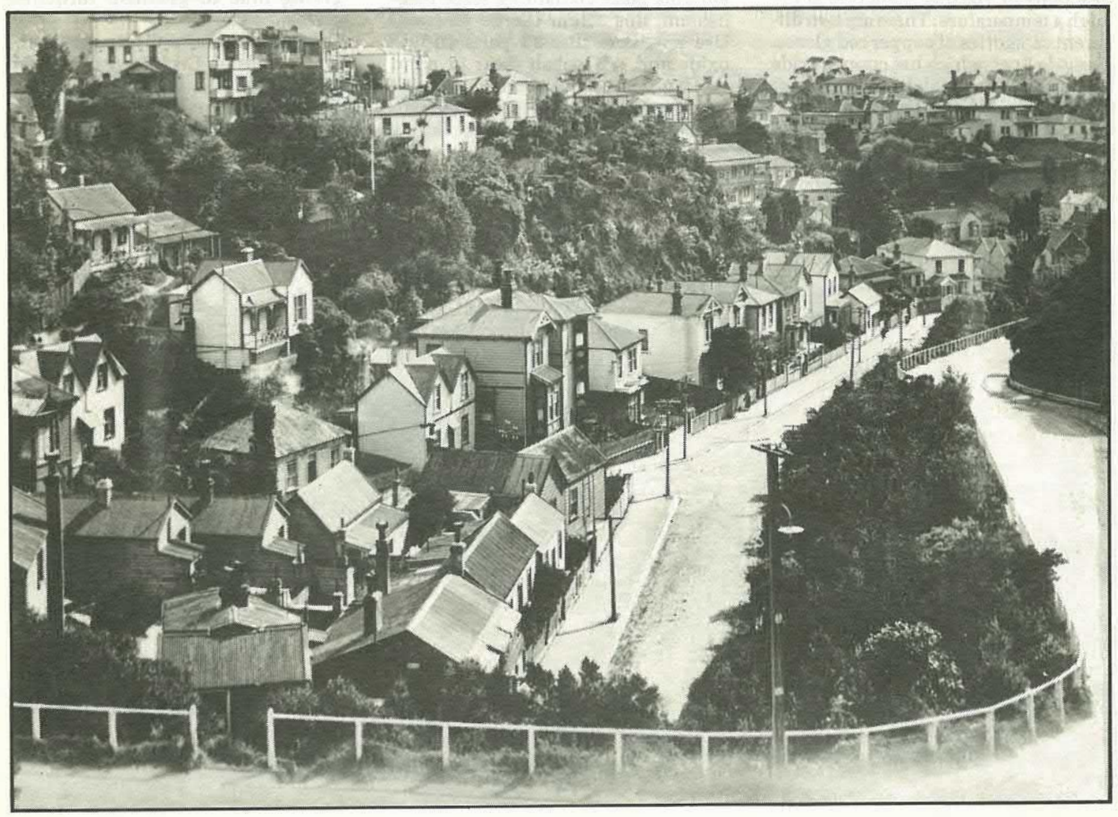
The houses vary in condition. There were some unfortunate alterations after the 1920's when the photograph was taken. Restoration in the style of the original building is taking place slowly. The owners are restoring by different means. One couple did theirs themselves, added on to it on small scale using demolition material, others started with workmen then picked up the skills to carry on, and yet another used only professional people.

Thorndon Trust, a property buying charitable trust that was formed to save the area from imminent commercial redevelopment five year's ago owns Granny Cooper's cottage. That's being restored using professional workmen for the major work and Thorndon Society working bees.

So there it is. Some see the area as a lot of old houses full of borer. Others appreciate its charm and warmth as part of our heritage to be retained.

Thorndon, Wellington, 1975.

Gillian McGregor



HIGH FIRED COPPER GLAZES

Betty Ivin

Generally there is a lack of colour in New Zealand pottery. Why is this so? Perhaps because iron is an abundant material, and iron glazes easily achieve reliable results. Or do our potters lack curiosity and the desire to succeed with other metal oxides?

For the potter using pale firing stoneware or porcelain bodies, a much broader palette is available and one has only to see some of our early Chinese ceramic museum collections to realise how delightful such colour can be.

Copper reds are not too difficult to achieve in a reduction atmosphere. Pots need to be contained in saggars if fixed in a mixed kiln, or the well known tendency of copper to migrate to other pots can give unexpected and unwanted green specks to the rest of the kiln setting. It is also necessary to start to the rest of the kiln setting. It is also necessary to start reduction at a lower temperature than is the case with iron glazes. The calcination temperature for copper colourants is 850-890°C and it is easy to miss some reactions by starting reduction at too high a temperature. There are two different categories of copper red glazes. Sang de Boef, which has copper oxide in the glaze itself, and Rouge Flambe where a porcelain glaze is used and the pots are fired in a saggar coated inside with refractory copper lustre paste. In the latter method the copper migrates from the walls of the saggar into the glaze during reduction firing.

The famous ceramic chemist, Seger, gives formulae for Sang de Boef, and one is listed below. (N.B. the first part is a batch recipe; the second part given for the flux is a molecular formula which must be converted to a batch recipe before arriving at the percentage to add to the recipe's first part).

Sang de Boef

	%
Clear porcelain glaze (maturing at a temperature to suit your needs	75.00
Copper oxide	0.15
Tin oxide (Sn0)	1.00
Red iron oxide (Fe_2O_3)	0.50
Barium flux	23.35

The barium flux formula is

Na_2O	0.5
B_2O_3	2.5
Ba0	0.5

Aubergine colours can also be achieved under reduction conditions, combining copper with cobalt. Used discretely over an opaque white high alumina glaze containing some magnesium, this colour can be pleasant. Use not more that 23 parts copper oxide and ¼% cobalt (bear in mind that one part of cobalt in 5000 will give a pale blue) in a glaze which will give an alkaline response, preferably not a sodium fluxed glaze. This would craze too readily because of the high coefficient of expansion with sodium.

Some lepidolite or petalite substituted for feldspar would be more likely to give a satisfactory result. The formula of petalit is

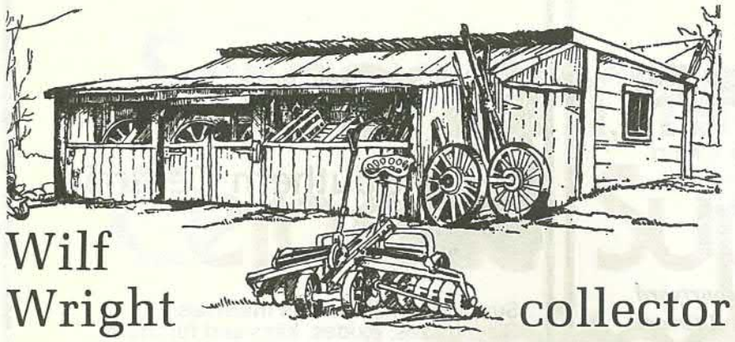
$li_2O\ A1_2O_3\ 8Si0_2$

This 1 to 8 ratio of base to silica is rather less likely to craze than soda feldspar which has the formula $Na_2O\ A1_2O_3\ 6Si0_2$. As with all high temperatur copper glazes, this colour can migrate to the surrounding pale glaze where it may give a delicate turquoise shading to the pale glaze.

An interesting hypothesis in this connection has occurred to me. Were the beautiful bluish green Chinese celadons a fortuitous result of ash glazed pots being exposed to copper vapour drifting through the latter chambers of a multi-chambered kiln? In this type of kiln, the most strongly reduced results come from the chamber nearest to the main firebox, and this is where these knowledgeable potters would have set their reduced copper glazes. The following chambers being exposed to the alternating reduction and oxidation of a wood fired kiln could possibly result in oxidised or neutral atmospheres giving blue to greenish turquoise glazes. References:

Oriental porcelains discovered in the Philippines — Ceclilia and Leandro Locasin

Ceramic colours and pottery decoration — Kenneth Shaw Glazes for the craft potter — Harry Fraser.



Wilf Wright collector

Our potters have absorbing interests apart from their craft. Starting with Wilf and Janet Wright of Reikorangi near Waikanae, we are going to run a series of illuminating articles.

Wilf Wright's neighbour tears down an old farm shed. The shed has been in the same family for years and it contains horse operated seed drills and hay derricks too good to toss away. Wilf takes them home to his place. He decides to convert a cow byre to house them. He is mindful that you can't have a museum in the country. Museums are for towns. He understands his land is not zoned for museums. But he has the nucleus of a collection.

A newspaper advertisement sends him following a scent to Foxton. With an engineer friend, a truck and a trailer he returns at 11pm. loaded with windmills and horse-drawn equipment. And so it goes. The word is spread and people pass on colonial farmhouse furniture and kitchen utensils and a butter churn. All find a permanent home at Reikorangi. Visitors to the pottery are always welcome to view the museum collection.

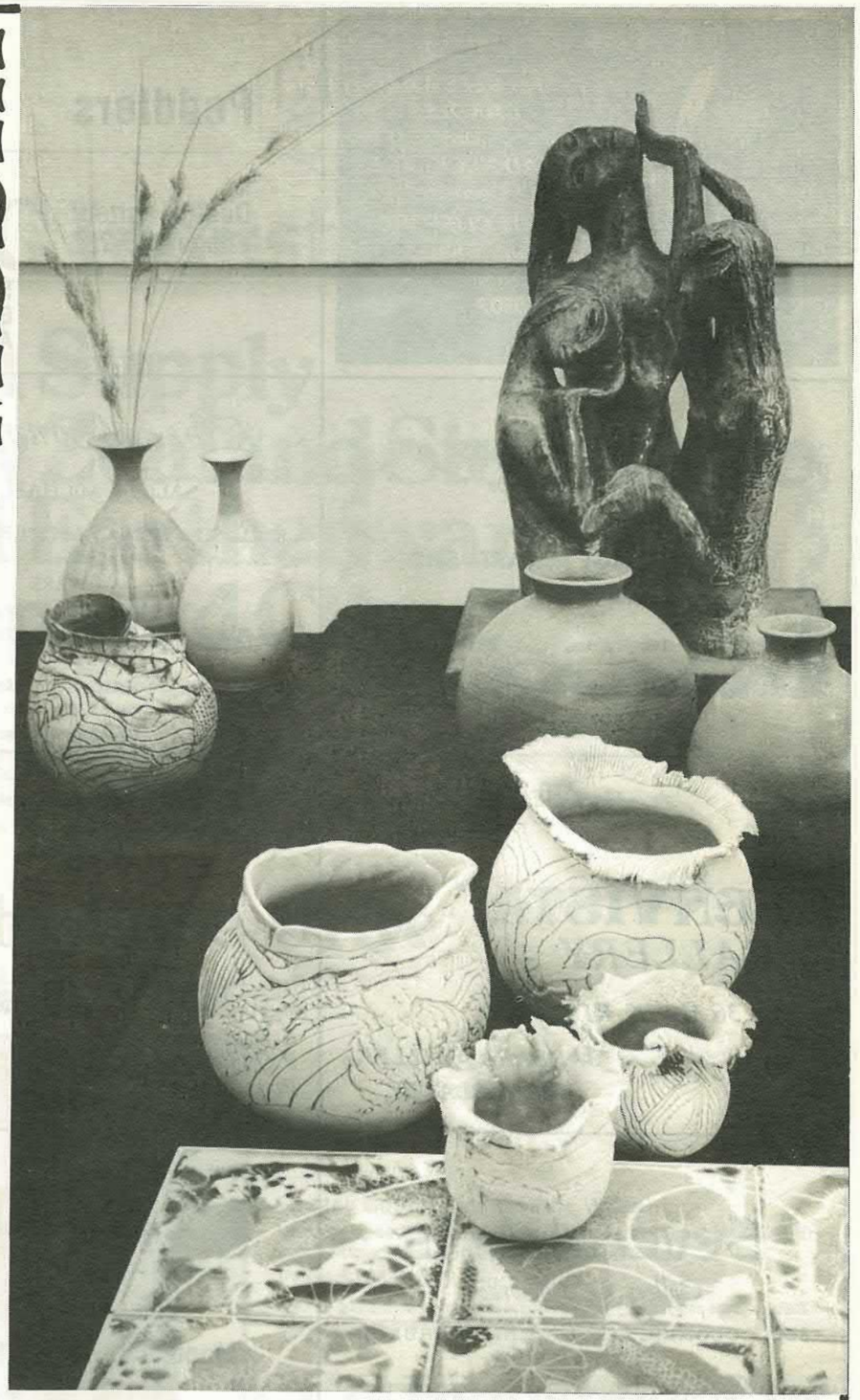
Another conservation project of Wilf's that Janet is equally keen about is the bird sanctuary they've established on their property. For a long time they've kept native parakeets, keas and kakariki in enclosures. Since the recent development throughout the Horowhenua and subsequent drainage of swamps there is less water to provide breeding places for native ducks and the once common white-faced heron. So the Wrights got a bulldozer in and made a lake 70 metres wide and planted the edges with grasses. "The only way native birds can survive is to make the right conditions for them to breed in captivity with a measure of protection."* So itinerant wild fowl join the other birds under the Wright's care. Janet always knows what to buy Wilf for Christmas. Last year it was a pair of peacocks.

On their 13 acres 60 kilometres north of Wellington the Wrights have an enviable situation. They get their livelihood by work they both enjoy doing. But further they have the scope and the time to maintain worthwhile projects like the ecological conservation scheme. The way most of us live today makes it impossible for ideas like this to become more than a dream even if we have the vision and the zeal to carry them out.

* Ducks Unlimited, is an organisation to which the Wrights belong. It has members throughout the country and has backing from the Wildlife Division.

Margaret Harris

MEDIA



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