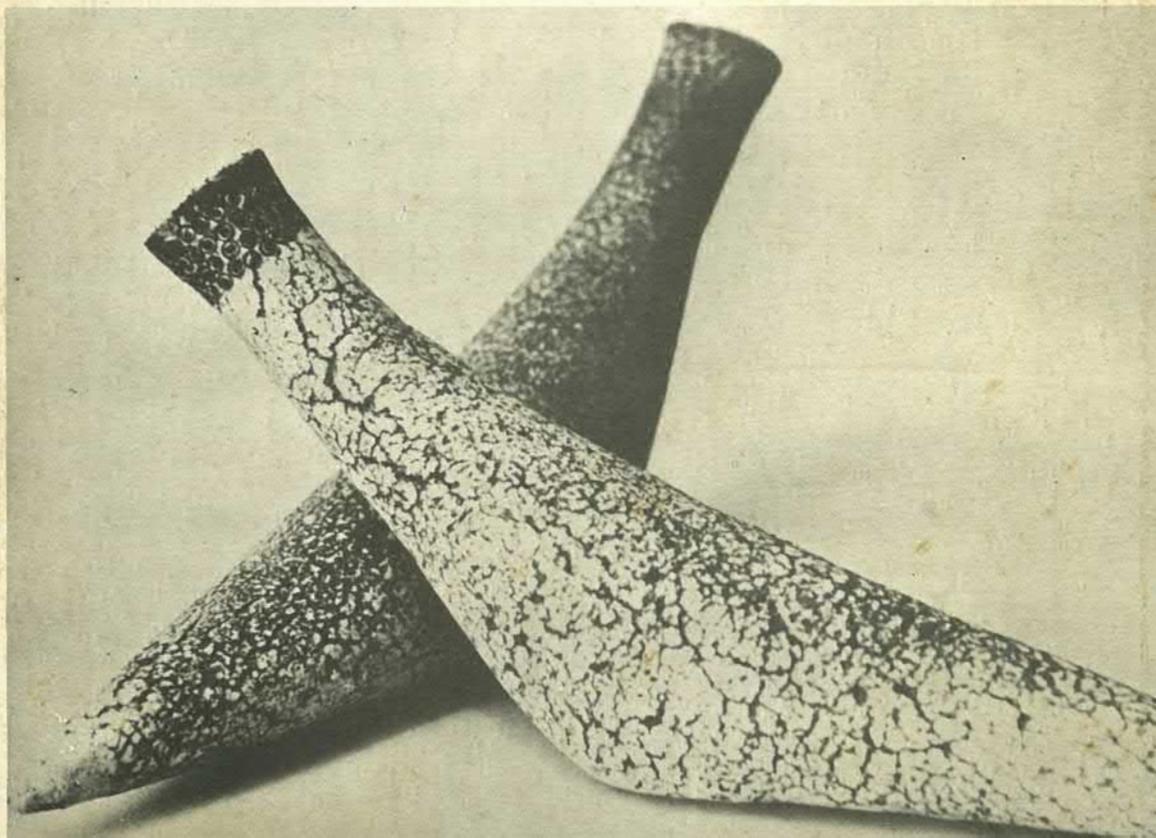


# New Zealand POTTER

Vol. 8 No. 2 Feb. 1966  
FIVE SHILLINGS



## Contents

EDITORIAL . . . . .	2
9TH NEW ZEALAND POTTERS' EXHIBITION . . . . .	3
CERAMICS AT FAENZA . . . . .	9
STABILITY OF CERAMICS — Roy Cowan . . . . .	12
ENGLISH POTTERY — A. R. Mountford . . . . .	19
POTTERY IN KUCHING — Ray Rose . . . . .	25
POTS BY LEN CASTLE . . . . .	29
QUEEN ELIZABETH II ARTS COUNCIL AWARDS —	
LEN CASTLE — Terry Barrow . . . . .	35
ROY COWAN — W. Easterbrook-Smith . . . . .	37
THE ARTS COUNCIL AND EDUCATION — D. Blumhardt . . . . .	39
NEW VISION . . . . .	41
ELIZABETH LISSAMAN — Margaret Milne . . . . .	42
POTTERS . . . . .	43
EXHIBITIONS . . . . .	47
JOHN CHAPPELL . . . . .	54
A SMALL KILN — Peter Stichbury . . . . .	56

## EDITORIAL

The scale of the 9th New Zealand Potters' Exhibition and the vigor with which it was mounted is an indication of the force of the pottery movement in this country. It also demonstrated one of the secrets of the potters — the ability to pool knowledge and work together as a team.

Could it be that the emphasis of the exhibition is changing? In the past the most important aim has been the guardianship of standards but with the excellence of the many one-man shows now being held, perhaps the main function of the annual national exhibition is now to bring together the work that is being done throughout the country, and to provide a meeting point for potters. The opportunity for younger potters to meet and be accepted by the older ones, the discussions that arise from knowledgeable criticism of the directions that potters are taking, the general swapping of knowledge, all these are of increasing value as time goes on and traditions are built. The local associations in the four main centre are strong enough and have enough experience now to run these exhibitions with guidance from the New Zealand Society. The changing of place ensures flexibility and gives local potters an idea of national problems.

We are on to something good, and if we stay within the bounds of what we know we can do, we can keep it that way.

### PHOTO CREDITS

#### Cover photos:

Bottles by Len Castle, unglazed, ochre and pyrolusite washes, length 10". Photos Terry Barrow.

Page 3 : Top: Peter Stichbury

Bottom: John Wood

Page 6, 7, 9, 10, Peter Stichbury

Pages 19, 20, 24, by courtesy of the City Museum, Stoke-on-Trent

Page 27, 28: Ray Rose

Pages 29-34: Terry Barrow

Page 37: Juliet Cowan

Page 41: Photo Associates Ltd., Auckland.

Page 42: Regency Studios, Morrinsville

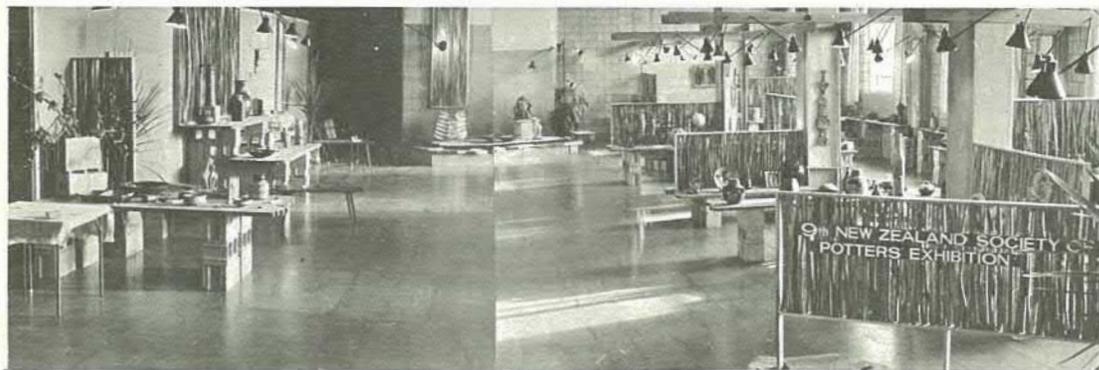
Page 52: David Brokenshire

Pages 56-58: Peter Stichbury

Page 54, Roy Cowan



Motif for Country Exhibition catalogue by Malcolm Warr.



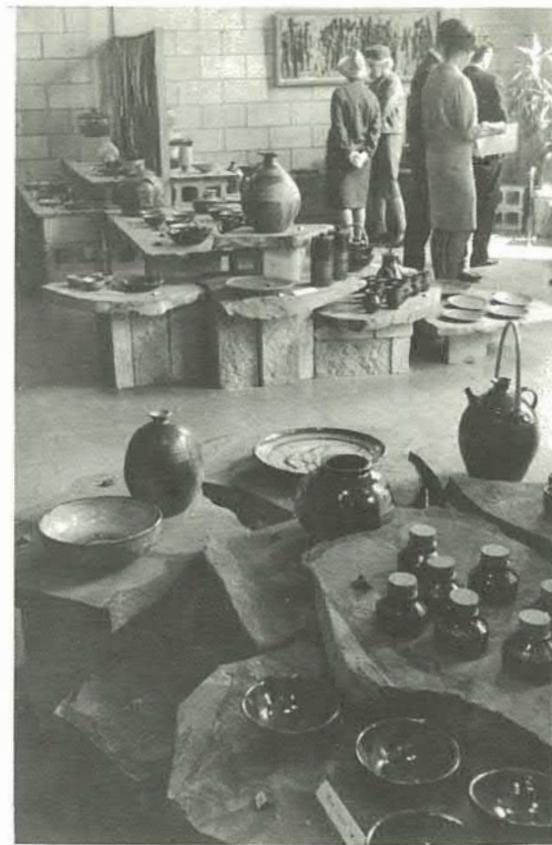
## NINTH NEW ZEALAND POTTERS EXHIBITION

### Design

The Lecture Hall of the Auckland War Museum was the setting of the Ninth Exhibition. This vast, cold, grey room, with concrete beam, pillar, and block construction — quite formidable in feeling — posed many problems to the Design team. However, the pillars provided support for lighting beams, and power was available at the foot of each pillar. The lighting beams echoed the ceiling beam construction and unified the whole room.

The lighting, which became one of the features of the display, was designed and assembled by the team. Nearly 70 fittings were used and these were devised from spun metal shades. With the exercise of much ingenuity, each fitting cost only 11/6 instead of the usual 75/-, and at the end of the exhibition the whole set-up was donated to the Museum in recognition of its generosity in providing all facilities free of charge.

The pillars in the hall provided the centres for "islands" of display. A working model



of a basic unit was made, and the committee worked from this idea, varying the units in arrangement to give variety and interest, and also to direct the flow of traffic.

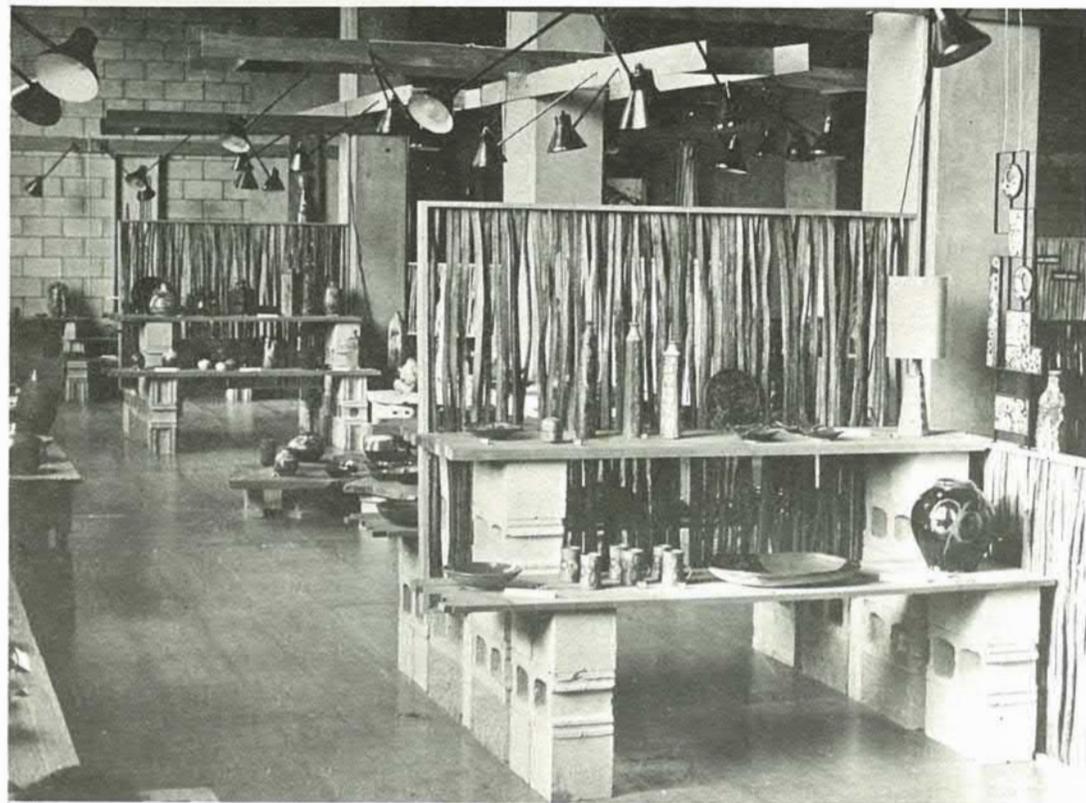
To give the display character, screens were made from the seed stalks of flax, split in half. These gave a soft, subtle warmth to the room, and provided a good background for the exhibits. They also divided the hall into areas which made it easier to view the vast number of exhibits. Cedar planking, with its soft, warm colour was used for shelving, and added interest, as well as display area, was given by the use of piles of large, thin slabs of local greywacke rock with its subtle colouring.

The Committee decided that the work of

each potter should be grouped together. Where a large exhibit required individual display it was placed as close as possible to the rest of the artist's work.

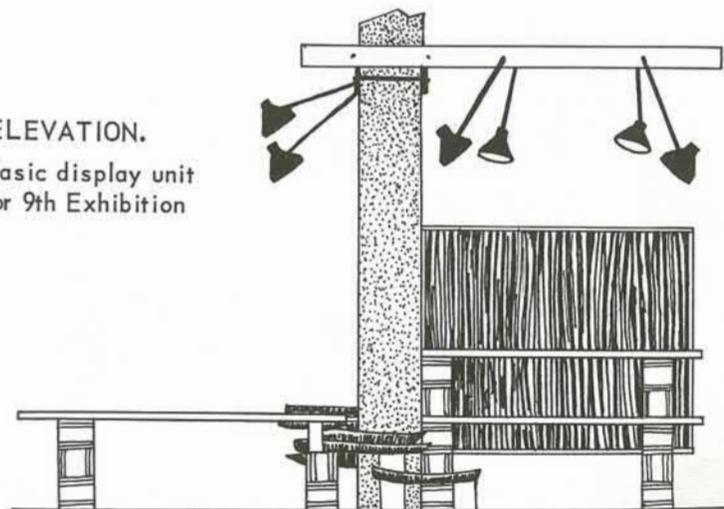
The success of the exhibition as a whole and of the display in particular was due to the tremendous effort of a group of people working together as a team. First there was the larger team of potters throughout the country who sent of their best work, and then there was the team of the Auckland Studio Potters. This group effort from packers and sorters, supper providers, display men, to secretary, treasurer, president, showed what can be accomplished by a determined body of potters, working to a common end.

Peter Stichbury

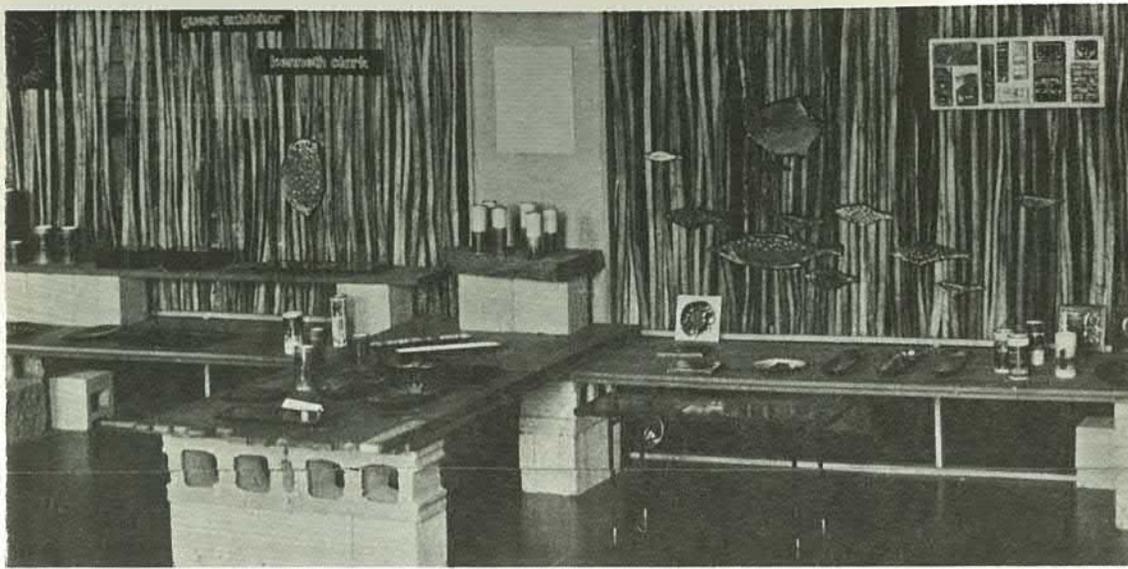


#### 9TH NEW ZEALAND POTTERS' EXHIBITION

ELEVATION.  
Basic display unit  
for 9th Exhibition



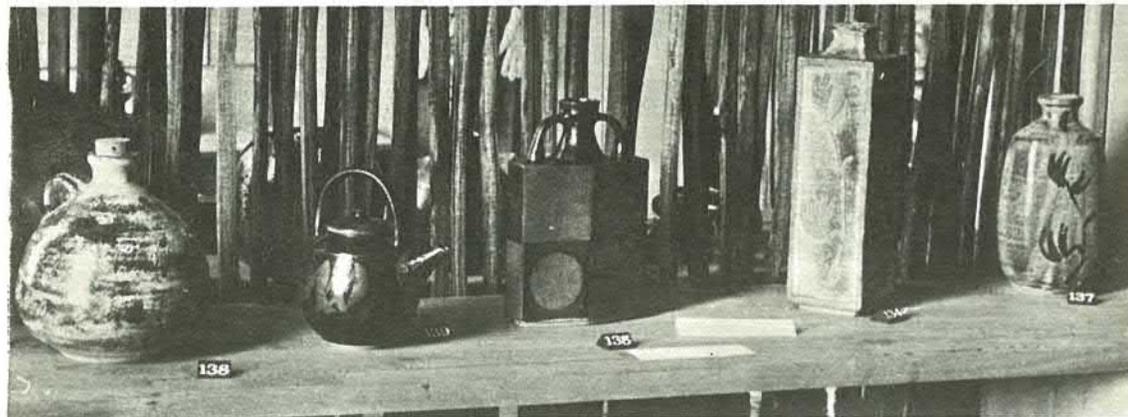
Peter Stichbury



Guest exhibitor at the 9th Exhibition was Kenneth Clark, a potter from New Zealand now working in London. His richly coloured earthenware was an inspiration to those working in the lower temperature ranges, and was a delight to viewers. A selection of this work will be touring New Zealand by courtesy of Mary Hardwick-Smith, who imported the exhibit at her own expense.

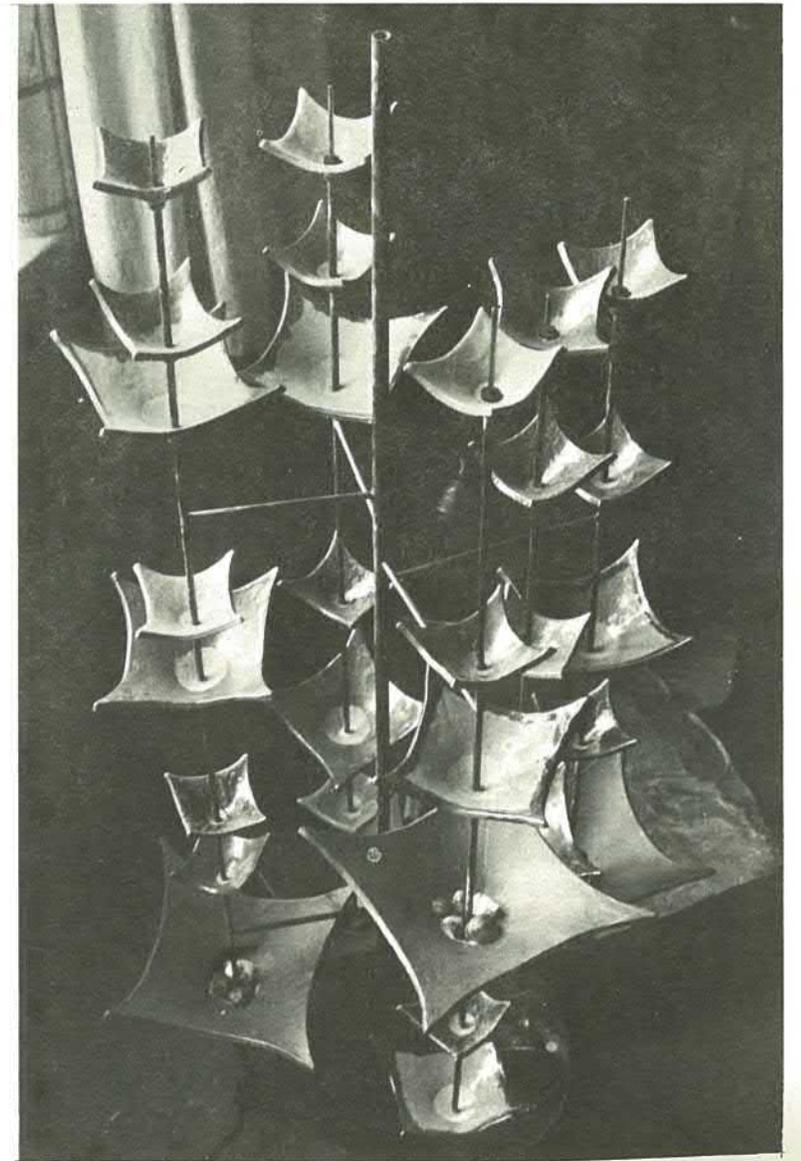
#### 9TH NEW ZEALAND POTTERS' EXHIBITION

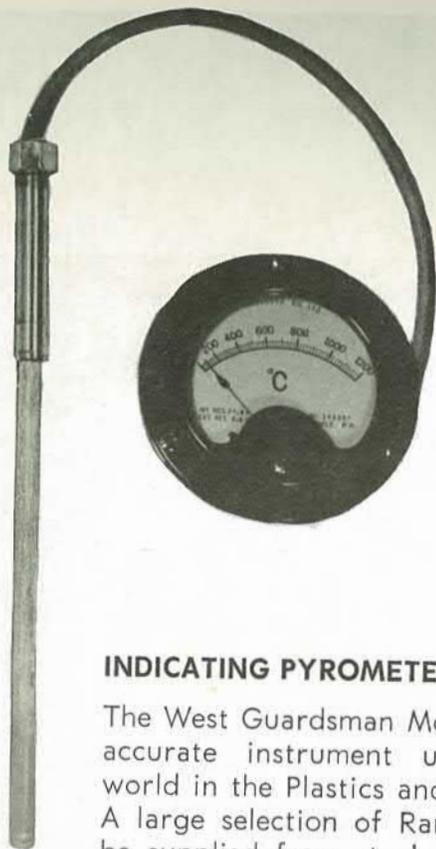
Neil Grant's exhibit. The square bottle has been purchased by the Department of External Affairs for the New Zealand Embassy at Geneva.



## NINTH NEW ZEALAND POTTERS EXHIBITION

Fountain by Jim Palmer



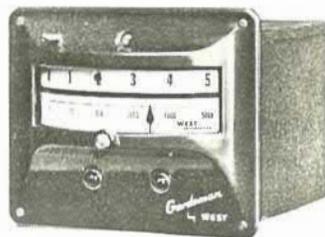


### POTTERY KILN PYROMETER

The model PKHP-31 has been designed primarily for use on pottery kilns. A reliable and accurate instrument available in two ranges, 0-1200°C or 0-1400°C. Suitable for panel mounting and supplied with 4' of Lead Wire; Platinum/Platinum/Rhodium Thermocouple and fused Silica Thermocouple Sheath.  
7¼" long x ⅜" o.d. Fitted to 23/4" x ½" o.d. brass holder.

### INDICATING PYROMETER CONTROLLER

The West Guardsman Model J is a robust and accurate instrument used throughout the world in the Plastics and Ceramics industries. A large selection of Ranges and Models can be supplied from stock.



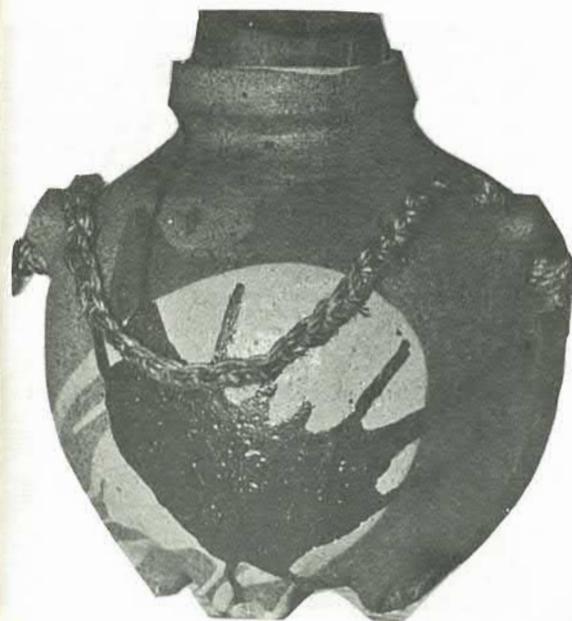
Thermocouples manufactured to order.  
For further information please contact:

Maintenance and repair facilities available for all instruments.

### THE BRITISH TELTHERM CO. LTD.

P.O. Box 9111 419 Khyber Pass Rd.,  
AUCKLAND. Phone 45-977.

P.O. Box 1624. 69 Kent Terrace,  
WELLINGTON. Phone 50-943.



Patricia Perrin

### CERAMICS AT FAENZA

From the Ninth Exhibition pots were chosen to represent New Zealand in the permanent collection of this Museum. It is also hoped that this country will contribute to the 24th International Ceramics Exhibition which is staged each year by the Town of Faenza. Below we print an extract from the introduction to the Catalogue of the 23rd Exhibition written by Prof. Guisepe Liverani.

"The 23rd Concorso Internazionale della Ceramica d'Arte opened at Faenza on June 19, 1965, and closed on August 29. The aim of this Annual Exhibition is to help to bind the peoples of the world together in an artistic brotherhood by displaying ceramics from all countries without barriers of race or creed.

"Despite the inevitable difficulties which occur in Italy as well as everywhere else the idea is slowly developing and becoming reality."

A Jury, consisting of six Italians, a German, a Frenchman and a Finn, admitted to the Competition 95 Italian competitors with 314 works, and 203 foreign competitors with 567 works, out of 389 competitors with a total of 2,106 works. Many prizes were awarded for many different types of ceramics, including the E.N.A.P.I. one for pots made by artisans and small industries, thus ensuring that all aspects of ceramics are given equal value. To quote again: "The prizes have been awarded impartially, without considerations of origin or prejudices unsuitable to the members of a family such as we consider potters to be, large though it is.

"From the exhibition it is apparent that artists are using fired clay, with its wealth of sensitive values not found in other materials, as a medium of expression for their imagination. In the same way that it is more difficult to conduct an orchestra than to play a single instrument, the many qualities of colour and structure that spring from the ceramic complex are more difficult to master than less complicated materials more constantly exploited by tradition. The breaking down of tradition is making it possible to discover new values in spite of the attendant difficulties.

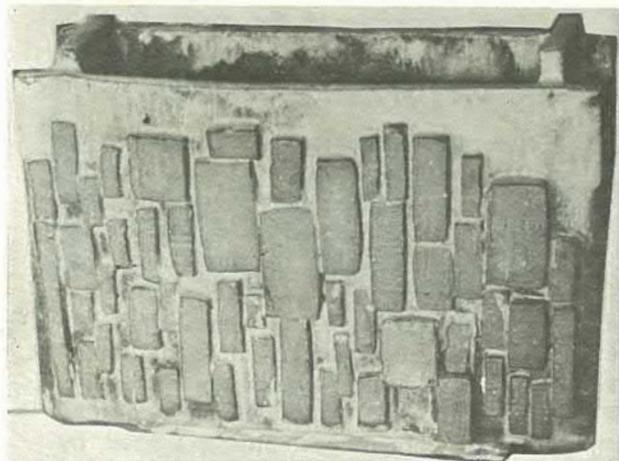
"The predominance of porcelain and stoneware would seem to indicate that at this time the artist is more interested in the plastic aspect than in pictorial expression, which tends to detract from structural properties and tactile values. The time is evidently not ripe for majolicas and faience with their brilliant colourings.

"In the field of industrial and utilitarian production, it is good to see that, together

with quality, the aesthetic aspect plays a more and more important role. Porcelain is increasingly being used by industrial designers, who have to cater for mass production.

"So the ancient and honest art of ceramics that has accompanied man in every development of his civilisation, is once again an integral part of life today, with its high standard of living and its belief in the equality of man."

Martin Beck



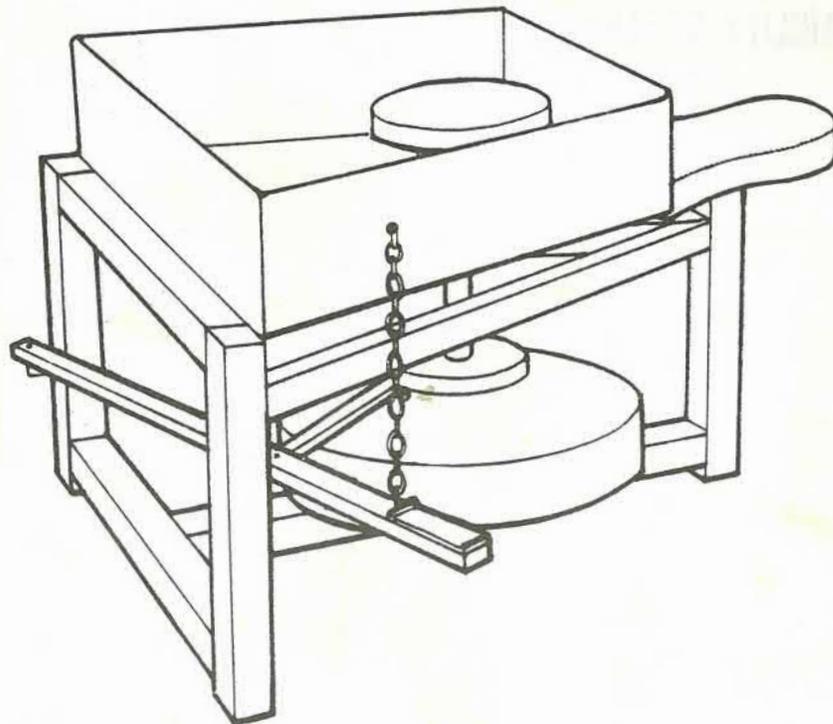
Space prohibits photographs of pots by David Brokenshire, Roy Cowan and Len Castle, also included in this group.



Peter Stichbury



Graeme Storm



## SEABOARD JOINERY LTD.

BESIDES MAKING GOOD POTS  
OUR WHEELS MAKE GOOD BIRTHDAY PRESENTS

Leach wheels manufactured by us can only be purchased direct from our factory — they are costed with a view to keeping the cost down to the minimum and do not allow margins for agents or resellers.

The charges are the same to all comers, whether schools, clubs, or individual potters.

Authorised manufacturers of "Leach" Potters' Wheels.

151 Marua Road, Ellerslie, S.E.6, Box 11035.  
Phones 594-264, 599-571.

## STABILITY OF CERAMICS

or, why glazes go ping and pots go pop.

"All the articles on display are stoneware and therefore ovenproof."—From an exhibition catalogue.

". . . It mustn't be hard fired or it won't stand up to the changes in temperature."—Bernard Toft on Casseroles, Craftsmen Potters' Association Newsletter No. 12.

And with that introduction a little list of things that happen to fired ware, as time passes.

Glaze, originally fitted, crazes.

Rims chip without cause or glaze scales off.

Ware appears sound but on being damaged, fractures into numerous pieces, or, the piece shatters or cracks spontaneously on the opening of the kiln or later.

Prominent spiral crazes appear, becoming actual cracks in body, especially in ware used for hot foods.

Ware cracks on heating or cooling.

The main objective of this article is to examine the ways in which the composition of a ceramic body can affect the life of the

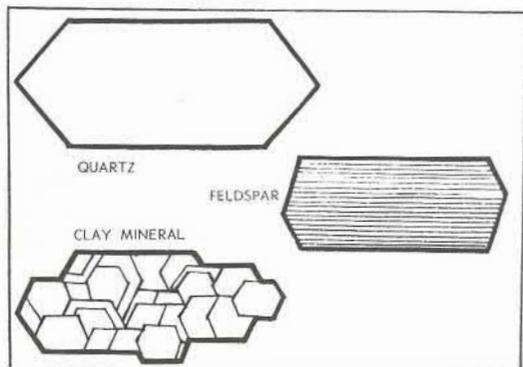


FIG. 1 A CLAY BODY

piece, especially one used in cooking, with some attention to some other factors affecting stability.

Delayed crazing is common in earthenware, or where the body is permeable. Figure 1 portrays a schematic clay body in which all the components are represented as three particles, a grain of Quartz and one of Feldspar, which are remnants of the parent rock, and the clay mineral, which may have one of several forms but is here accepted as a compound of Alumina, Silica, and Water. The continuation of the weathering process would result in the conversion of more of the Feldspar into clay, and the clay mineral itself would change.

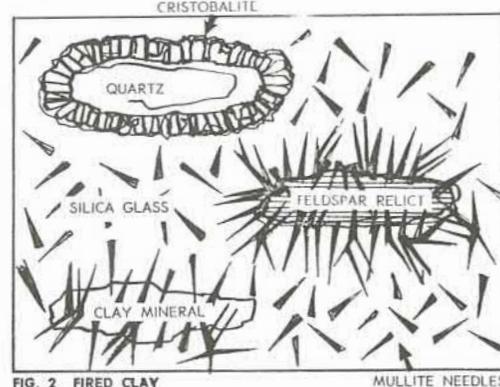


FIG. 2 FIRED CLAY

In Figure 2, the clay has been fired. At a low temperature, between 200 and 500 degrees C. according to the clay type, the water content of the clay mineral acquires sufficient energy to escape from the bond with Alumina and Silica. For a short period in the temperature scale the clay material is in a condition where the clay or ceramic state is reversible. Ware fired to this temperature—as in a too cool biscuit chamber or one which has marked temperature variation, may appear to be adequately biscuited but it will swell upon being wetted with glaze and cracks may form under the glaze. Figure 3 shows a pattern

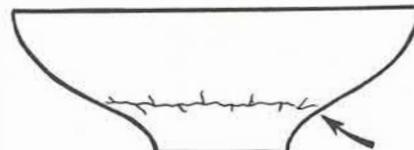


FIG. 3 UNDERFIRED BISCUIT

of cracks formed in this way, the outer surface of the bowl cracking when the inside was glazed. The faults on occurrence may be hard to detect but they open up in the glost firing.

As the temperature advances, changes occur in the organisation of the Alumina and Silica in the clay mineral. In the clay minerals Kaolinite and Halloysite, the two are initially in the relation of one of Alumina ( $\text{Al}_2\text{O}_3$ ) to two of Silica ( $\text{SiO}_2$ ), but the stable relationship changes on heating towards a higher ratio of Alumina to Silica, with exclusion of the surplus Silica. Above about 1100 C., the two form the refractory compound Mullite,  $3\text{Al}_2\text{O}_3 \cdot 2\text{SiO}_2$ , the surplus Silica appearing as glass or crystal according to conditions. The general effect of heating is to increase the surface energy of the particles comprising the clay body, so that exchanges can occur more readily at the points of contact, resulting in a light welding together of the particles. Once definite temperatures are reached, the energy becomes sufficient to allow the formation of new reaction products, and the reaction proceeds in proportion to time and at a speed influenced by the amount of extra heat energy made available. In general, the rate of all ceramic reactions doubles with every fifty degrees of temperature advance above 1100 C.

Mullite crystals have a needle-like form. They increase the strength of the ceramic, indicating the advantage of firing earthenware bodies in the region 1100 to 1120 C.

Turning again to Fig. 2, it will be seen that

the Feldspar particles are changed from the surface. If the Feldspar were the commonly used Potash type,  $\text{K}_2\text{O} \cdot \text{Al}_2\text{O}_3 \cdot 6\text{SiO}_2$ , the change would produce Mullite and excluded Potash,  $\text{K}_2\text{O}$  and Silica. In other words, Feldspar does not melt as such, it changes to Mullite and Silica Glass, and there will be some of the flux, Potash, Soda or Lime according to Feldspar type, left over to contribute to glass formation with Silica from the clay mineral or the Quartz originally present. Silica glass formation proceeds from the surface of Silica particles, some part remaining in the crystalline form even in vitrified porcelains.

In the unfired clay, the spaces between particles form a continuous system of pores. As firing continues the particles begin to fuse together, reducing the pore space. In porcelain pore space is almost absent, but in earthenware the structure is still open enough to allow permeation. Dampness may then enter the body through any slight fault in the glaze or by general diffusion. This permits the resumption of the process of weathering which originally produced the clay from the rock, in this case operating on the unaltered residues. When the piece is heated in the course of use, the conditions are right for accelerated weathering, accompanied by an increase in volume. The glaze is not so readily affected and as a result it becomes stretched and eventually crazes.

The cure, in the present state of knowledge, is to place the glaze coating in compression on the body, that is, the glaze, in cooling, contracts at a lesser rate than the body so that a degree of subsequent swelling of the body must occur before the glaze coating passes into tension. The amount of glaze compression must be right—although it cannot be directly measured. Too little will mean early craz-

ing, too much will produce other troubles. A comparative indication of the states of a series of glaze and body combinations can be obtained by running test strips in an Autoclave (pressure cooker). The exposure to water, heat and pressure accelerates the weathering effect. The fitting of glazes is well covered in Daniel Rhodes "Clay and Glazes for the Potter", Chapter 25.

### Failure of Ceramics

A ceramic body is a mass of phases of different compositions, and between these are discontinuities, pore spaces, or minute cracks originating in the differing thermal expansions of the phases. This structure will stand substantial compressional loads indefinitely, but is relatively weak in tension. Figure 4 shows an imaginary test slab of a body in which all the random discontinuities are resolved as three cracks running at angles. A stretching force *S* is applied. All that part of *S* which should operate between A and B, the ends of the crack aligned at right angles to the direction of stretch, is transferred to the points A and B. The crack thus acts as a stress magnifier, and if the load at A and B exceeds the strength of material, the crack will extend.

A glaze in high compression favours the growth of cracks in the body in this way. In such a situation there are several possible results. In a thick walled piece the force exerted by the glaze is less likely to over stress the body — it is the lightly

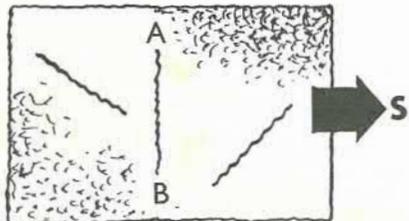


FIG. 4 DIRECTION OF CRACK GROWTH

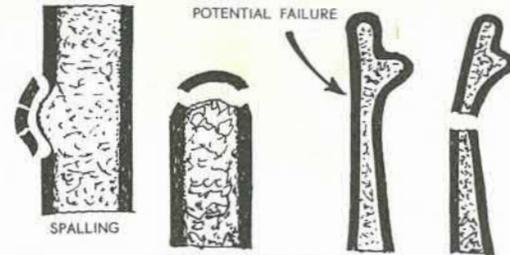


FIG. 5 GLAZE COMPRESSED, BODY STRETCHED

made piece which is more likely to fail of glaze compression alone, because the effect is greater on the thin section of the wall. This however is no argument in favour of making teapots or casseroles very thick. In the case of permeable bodies, an initially high glaze stress will fall as the body swells. This relief is not effective in more vitrified wares.

When the glaze to body bonding is weak, or when the bonding is strong to a very heavy body, the probable form of failure is by shelling off the glaze, usually beginning on rims where the glaze coat is longest in relation to the body. Alternatively, the piece shatters by crack growth, and this may happen on the opening of the kiln, or at some stage of use, or when the piece receives some slight blow or damage. If the fragments of such a casualty are tested, they will be found to snap with surprising ease.

It would seem obvious that the cure is to adjust the glaze to a less tight fit. Unfortunately, this is where the serious difficulties begin for many N.Z. potters (and others too), who are out to make reasonably light and durable domestic ware, because many of the clays which have admirable qualities from other aspects have firing characteristics which make a stable clay and glaze relationship difficult of achievement.

In the earlier description of the heating of

clay, we began with Silica in combined form in the Feldspar and the clay mineral, and in free form as Quartz. The amount of Quartz present is influenced by the nature of the parent rock, the history of weathering, and where the clay has been transported, by sorting action.

At normal temperatures Quartz crystals have the form known as Low Quartz. At about 570 C. this changes sharply to a High Quartz form with a volume increase, providing the main source of cracks in biscuit which is being unevenly heated. As the same temperature on the cooling side, the change occurs in reverse, placing the glaze in higher compression. To avoid biscuit losses from the Quartz reversal, the heating rate should be held to a maximum of 100 C. an hour to 600 C., and if at this rate cracks still occur in average sized pieces the fault will probably lie in the temperature distribution in the kiln.

A second change affects Quartz at high temperatures, in which the crystal is reconstructed in an entirely new pattern. Unlike the Low Quartz-High Quartz change, the new change is not rapid or total, and it does not work in reverse. The end product of this reconstruction is a form of Silica crystal called Cristobalite, which has a system of reversal changes of its own. Cristobalite undergoes a Low High reversal of large magnitude at only 220 C., just the temperature at which the enthusiastic potter will open the kiln, and quite within the range of ovenware operating temperatures.

The formation of Cristobalite is governed by the amount of Silica available at the reconstruction temperature, that is, the original Quartz, plus Silica excluded from the clay mineral or Feldspar and not fused into glass. Cristobalite formation also depends on the presence of other sub-

stances in the clay, and the freedom of formation is related to the history of the clay. Thus two clays from different places which have similar amounts of Silica may form Cristobalite at quite different rates. Finally, formation is governed by time and temperature, and it is correct to say of bodies prone to form Cristobalite that they will become more unstable the longer and harder they are fired.

When other measures have failed to stop crazing, Cristobalite can be purchased from suppliers and added to the body, but it is a different matter when the amount present responds to a complex of causes including variations in the firing. Unfortunately many N.Z. clays, particularly amongst the more fully weathered types found in the north, are strong Cristobalite formers. This means, at least, difficulty in maintaining the correct amount of glaze compression, susceptibility to heat shock in ovenware, and decided difficulty in cooling and drawing large pieces, glazed or not, without damage. Excessive glaze compression which might not be enough to cause trouble in a vase can cause failure in a coffee pot when the extra stress of filling with hot liquid is imposed.

### Counter Measures

#### 1. High Alumina clays

Construct the body out of two main clay ingredients; a High Alumina clay which will probably be high-firing, relatively non-plastic, and light coloured, and a plastic, fusible type clay. The latter will probably be coloured and will have Mortmorillonite, a clay mineral containing fluxes, in its composition. The fusible clay should be tested separately to ensure that it melts without bloating.

Use as little of the fusible clay as will give sufficient plasticity to the body which

should at this stage be on the high-firing side. Add a flux to bring the body to the correct maturing temperature. Normally this will be Feldspar, although other fluxes such as ash, the commercial frits, or materials such as crushed granite or pumice may be used according to the type of firing or where effects such as speckling or iron tinting are acceptable.

The High-Alumina clay provides the basis for the maximum formation of Mullite, and the addition of Feldspar will ensure that as much Silica as possible is converted into glass. In the glassy form, Silica has a low thermal expansion and no reversal changes. If these conditions are obtained, then the longer and harder the body is fired, the more stable it will become—the limiting case being porcelain, which has low thermal expansion.

## 2. Wollastonite, $\text{CaSiO}_3$

In the treatment of bodies which are to remain porous, Feldspar is still commonly used, but at the lower temperature conditions there is the problem of swelling. For such conditions part of the Feldspar can be replaced with Wollastonite.

## 3. Magnesian Additives

The addition of Magnesia results in the formation of Magnesia-Silica compounds (Enstatite,  $\text{MgO} \cdot \text{SiO}_3$ ) or Magnesia, Alumina and Silica compounds (Cordierite,  $2\text{MgO} \cdot 2\text{Al}_2\text{O}_3 \cdot 5\text{SiO}_2$ ), which have very low thermal expansions. Talc may replace part of the Feldspar to secure this result. Nelson Talc-Magnesite is prepared for use as a Magnesian Fertiliser in a screen size suitable for ceramic use. It is a very strong flux and there are two main limitations in use. It contains iron and will colour the body. As part of the Magnesia is in the carbonate form, gas is evolved and may cause bloating.

Magnesian minerals shorten the firing range of clays, but the body can be adjusted to mature over a manageable range if Feldspar is also present.

As the above measures take effect the cooling shrinkage of the body diminishes and glazes may require adjustment to avoid crazing. The relative heat-shock resistance of a group of trials may be found by taking fired test strips up to dull red heat, and at once immersing half their length in water. A good casserole body should stand several cycles of this treatment.

There remain some causes of failure which are the result of design rather than of body characteristics. These need to be distinguished.

## Twist

When a hollow form is thrown, it receives a twist, part of which is relieved by "unwinding" during the drying and firing. In non-vitrified bodies a residue will remain and may appear as a system of spiralling crazes and cracks especially in tea and coffee pots. This is the response to a combination of clay type and the drag in throwing, the throwing technique, and the degree of firing, so a simple remedy cannot be suggested.



FIG. 6 SPIRAL CRAZING

## Thickness

The aim in making ware required to withstand temperature changes should be to secure as uniform a thickness in all parts as possible, so that all parts heat or cool uniformly. Excessive thickness, particularly in tea pots and the like, weakens the piece to thermal shock. The aim should be to secure, for larger casseroles, a uniform  $\frac{1}{4}$ " thickness, and for tea and coffee pots,  $\frac{3}{16}$ ", with  $\frac{1}{8}$ " allowable for lids and spouts.

## Design

Heat-change stresses are concentrated at any sharp changes of section or direction. The best forms change direction through a radius rather than sharply. Angular styles are not precluded provided that the angles

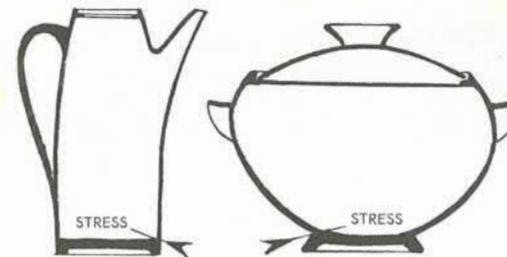


FIG. 7 THICKNESS CHANGE INCISION STRESS

are in fact slightly radiused. All sharp incisions or notches should be avoided.

This article has been confined to general principles because of the difficulty of dealing adequately with the great variety of N.Z. clays, which still require much study and mapping, but some attention will be given in a future article to some of the clay bodies in actual use.

ROY COWAN

## IAN MCPHERSON

WOLLASTONITE	80 lbs. bags	£1.12.10
DOLOMITE superfine	112 lbs.	£1. 5. 5
WHITING (Calcium Carbonate)	80 lbs.	18. 0
FELDSPAR, Nelson	112 lbs.	£1. 6.10
TALC	56 lbs.	15. 9

All the above minerals are ground to 200–300 mesh. Freight or postage additional to listed prices.

IRON OXIDE 112 lbs. £1. 8. 0

Lb. lots 1/- per lb.

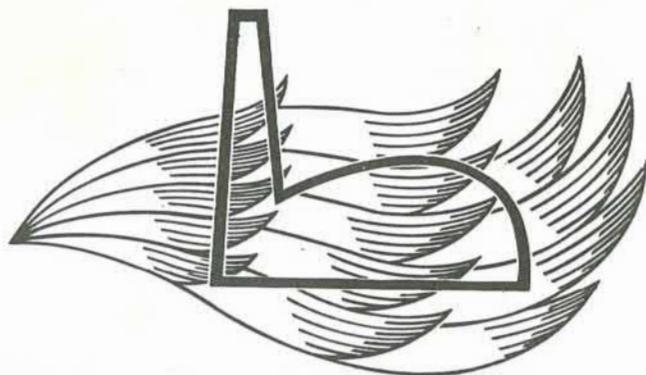
Freight or postage additional to listed prices.

All these products have been tested and approved by practical potters.

Accounts will be forwarded monthly.

Ian McPherson, Mapua, Nelson.

## Firing well using Shell



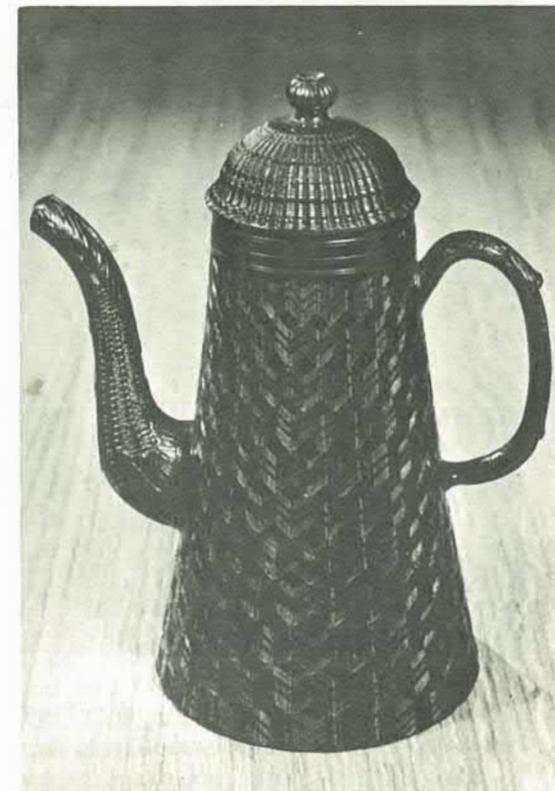
 **Thermol**

Superior quality low-cost fuel for oil firing

It has to be good to be



A cooking pot from mid-first century A.D., found in Trent Vale Roman kiln.



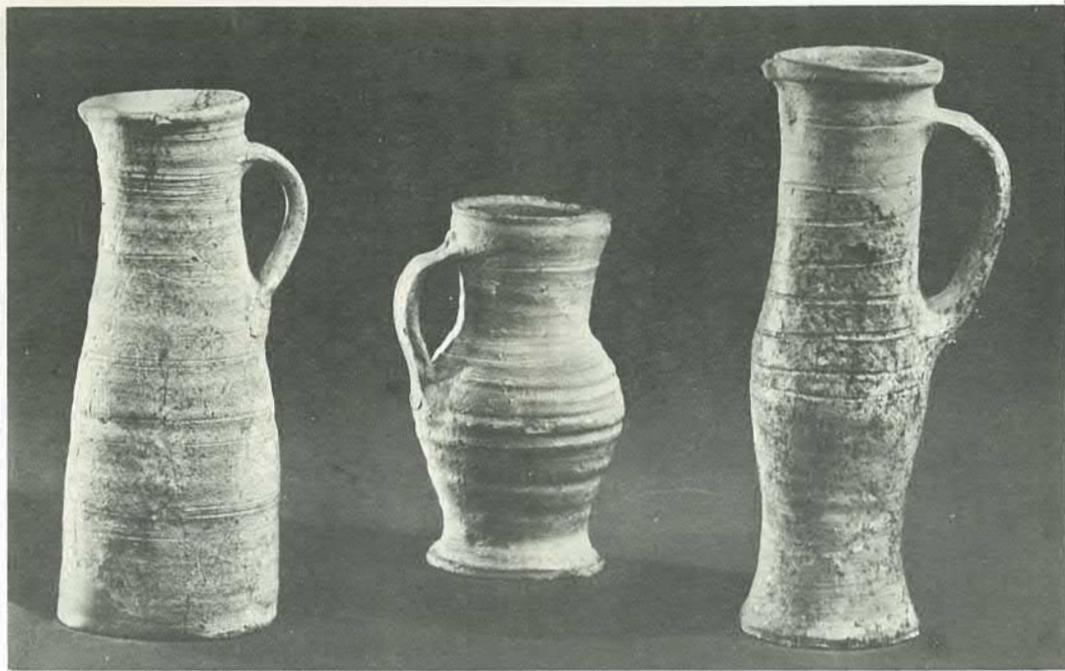
Engine-turned earthenware coffee pot from Stoke-on-Trent in the second half of the century.

## HISTORY OF ENGLISH POTTERY

by A. R. MOUNTFORD

Pottery was first made in the British Isles more than 4,000 years ago in the Neolithic (New Stone Age) period when man began to practise agriculture and live in a settled community. Round-bottomed bowls fashioned by hand from wads of clay reinforced with shell or grit were fired either in or by the side of a fire. The earliest forms were achieved by forming a ball of clay into which the thumb was thrust; the ball was then rotated and the clay squeezed between thumb and fingers outwards and upwards

until a pot of the desired shape and thickness emerged. This technique was augmented by coil or ring-built pottery in which rolls of clay were superimposed to a predetermined height and the coil-junctions smoothed out by hand to the required shape. Throughout the prehistoric period the predominant types of hand-made pottery were storage jars and funerary vessels often bearing impressed, incised or punctuated decoration. As in modern primitive communities the tribal potters



Medieval English pottery; left to right — Sneyd Green, about 1300 A.D.; Stafford, 14th century; Oxford, 14th century. Examples of Longton Hall porcelain, c. 1750.



were women who fabricated their clay receptacles as and when needed. Such simple methods continued in our country for more than 2,000 years until the importation of the potter's wheel in about 75 B.C. (Early Iron Age "c" period) which stimulated productivity.

Utilisation of the potter's wheel encouraged an endless variety of symmetrical forms, particularly during the four centuries of Roman occupation. The Romano-British ceramic product was not only "thrown" on the wheel, but "turned" (surplus clay shaved from the outer wall of the vessel) giving an overall improvement to the surface of the pot. The most favoured type of kiln during this period was the updraught — a typical example was excavated during 1956 at Trent Vale, Stoke-on-Trent, in which the original clay dome had collapsed, sealing in the last firing. Roughly circular, the kiln had an average diameter of 3 ft. 6 in. and measured 4 ft. in height. A flue led into the lower part of the kiln from a stoke-hole and the floor of the kiln was constructed of radiating firebars set on a central support. In common with the majority of early Romano-British wares the pottery at Trent Vale was of high standard and though purely utilitarian the variety of form emphasises the versatility and capability of the potter who by the middle of the first century A.D. was producing large quantities, possibly on army contract.

Anglo-Saxon invaders who subsequently settled in this country after the Roman withdrawal in the early 5th century were not familiar with the potter's wheel and their ceramic achievement was limited to the manufacture of a mud-pie type of soft hand-made pottery mainly as funerary ware. Bag-shaped forms were either plain or decorated with impressed stamps and incised lines. At the end of the Anglo-Saxon

period the wheel was re-introduced and from the area around Thetford pottery fragments have been excavated showing the use of lead glazes coloured green and yellow through the presence of oxides of copper and iron.

Lead with various staining compounds continued in use throughout the Middle Ages, during which time no area of the country specifically manufactured pottery; wares were fashioned where clay was available and wherever there was a demand — with the output obviously greater in the towns. The rise and growth of monasticism during the mediaeval period encouraged pottery production by catering for the needs of people in the immediate vicinity and abbeys also stimulated the art of tile-making. Though the updraught kiln continued in use throughout the Middle Ages, the most popular was a circular type with radiating fire-mouths. Examples excavated at Sneyd Green, Stoke-on-Trent, were saucer-shaped and had five fire-mouths. Working about A.D. 1300, the Sneyd Green potters used coal (local outcrop) to fire their kilns and achieved a temperature in the region of 1,000 deg. C.

In the 16th century the popular continental tin-enamelled and salt-glazed stonewares were being exported to this country in large quantities. The tin-enamelled pottery later took on the name of Delft-ware (from the town of Delft in Holland) and was made in London at Lambeth and Southwark. Later, throughout the 17th and the first half of the 18th century several towns had potters making this class of ware, namely, Bristol, Wincanton, Liverpool, Glasgow and Dublin.

The challenge to the imported Rhenish stone ware was taken up by John Dwight at Fulham who in 1671 took out a patent (renewed in 1684) for the manufacture of "transparent earthenware, commonly

known by the names of porcelain or china or stoneware, vulgarly called 'Cologne ware'. There was many imitators and between 1693 and 1696 Dwight brought several actions for infringement against the Dutch brothers Elers (who were making unglazed redware at Bradwell, Stoke-on-Trent) and Morley of Nottingham in defence of his patent rights. Nottingham was an important centre for salt-glazed stoneware from about 1690 to about 1800 and other towns producing this type of pottery during the 19th and even to the present century include Crich, Codnor Park, Denby, Belper, Chesterfield, Brampton and Swinton. Today the technique of glazing pottery with salt is mainly confined to the production of sewage pipes.

The early 1600s saw a type of pottery, characteristically English in style, made at Wrotham in Kent. This was slipware in which slip (clay watered down to a creamy consistency) was used to decorate the surface of the pot — effected by trailing the slip in the manner of icing a cake. This class of ware, covered with a lead glaze, was also manufactured in the Metropolitan area, but by the second half of the 17th century the centre for slipware was in North Staffordshire in the area we know today as Stoke-on-Trent.

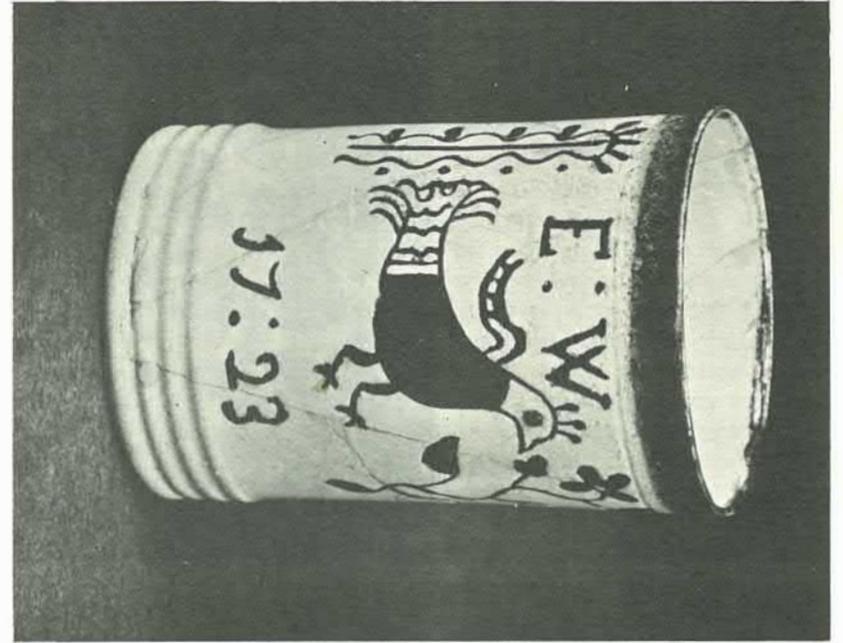
By the middle of the 17th century Burslem was the centre of the butter-pot industry, making the tall cylinder containers for Midland market towns and from this time men began to specialise more and more as potters. Certainly with the arrival of the slipware technique we begin to identify the work of individual potters such as Toft, Simpson, Malkin and Wright. Ideas of pottery shape and style of decoration were purely local, and in the 17th century illustrate, in the main, pure peasant art. It is not until the beginning of the 18th century that outside demands, resulting from

changing fashions, etiquette and general living standards stimulated the Stoke-on-Trent potters to supply new forms and new methods of decoration. The age of the family manufactory with its kiln set on the smallholding was over. Servants were hired to learn the "secret art and mystery" of the potting business — pack-horse transport distributed the wares to the seaports to supply the growing needs of the colonies. Manufactories grew in size and more workers were encouraged to seek employment in the pottery villages now known collectively as "The Potteries".

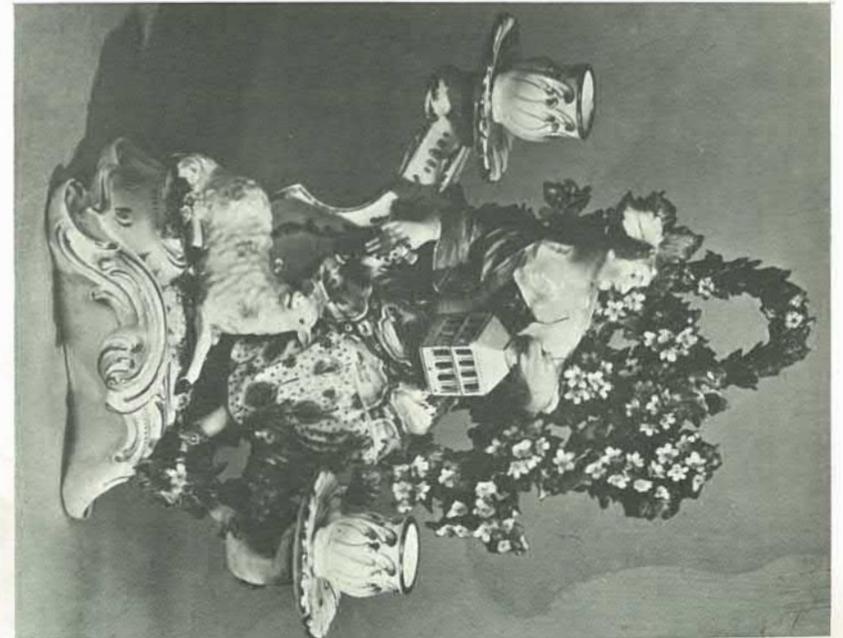
It is said that either John Astbury or Thomas Heath was responsible about the year 1720 for using calcined flints with local clays and thus achieved a lighter-coloured salt-glazed stoneware. A nearly white stoneware became possible with the importation of Devonshire clays and enjoyed a great vogue as a substitute for porcelain which it rivalled in hardness and lightness. The introduction into Stoke-on-Trent of plaster-of-paris moulds by Ralph Daniel of Cobridge about 1745 means that instead of wares "thrown" on the potter's wheel hollowares could be "cast" by pouring liquid clay-slip into the moulds. This encouraged an almost unlimited variety of forms and contributed to the beginning of pottery making as an industry.

By the 1770s Josiah Wedgwood had perfected his lead-glazed cream-coloured earthenware which was destined to replace not only the salt-glazed stoneware but also the tin-enamelled earthenware throughout the whole continent of Europe. Until now the ceramic product had been almost invariably utilitarian but changes in custom and habit made new demands on the potter and for him the 18th century was an era of experiment. Apart from creamware, Wedgwood perfected various ornamental bodies such as Jasper, Black

Salt-glazed stoneware, Stoke-on-Trent, 1723.



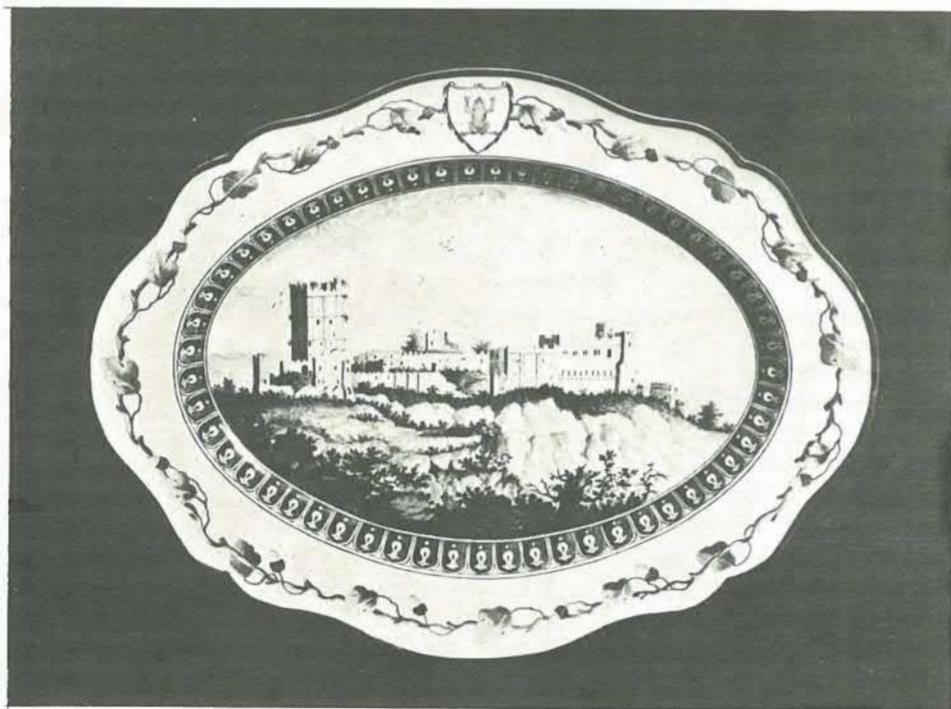
Chelsea porcelain, Gold Anchor period, c. 1775.



Tin-enamelled earthenware  
from Lambeth, c. 1690.



Number 409 in the "Queen's Ware" service made by Josiah Wedgwood & Sons  
for the Empress Catherine II of Russia.



Basalt and Agate Ware, all of which enjoyed wide popularity and were the target for a host of imitators.

From about 1760 Wedgwood products bore a back-stamp—a feature which commended itself to other potters including the Ralph Woods of Burslem who are perhaps best known as figure-makers. The coloured glazes used by the elder Wood distinguish his products as amongst the finest ever to have been made in Staffordshire and coupled with the names of Wedgwood and Wood is that of Thomas Whieldon, another outstanding contributor to the ceramic story, who was in partnership with Wedgwood from 1754 to 1759.

The manufacture of English porcelain began a little before the middle of the 18th century and is divided into two main classes: true (hard-paste) porcelain similar to the Chinese and artificial porcelain (soft-paste). The body of hard-paste porcelain consists of a mixture of china stone and china clay and was used at only three factories, Plymouth (1768), Bristol (1770)

and New Hall, Stoke-on-Trent (1781). Examples of this type show a shining fracture when broken and are completely vitrified and dense. The earliest soft-paste porcelain consisted of a white clay mixed with ground glass and either lime or chalk, and was made at Chelsea (1745), Derby (1750), and Longton Hall (1749). This was followed by a purely English innovation of mixing calcined bones with the white clay together with sand or ground flint. Initially used at the Bow factory (1747) it was later in production at Lowestoft (1757) to be followed by most of the factories in this country. The third variety of soft-paste porcelain in which steatite was a basic ingredient was produced at Caughley (1772), Liverpool (1755) and Worcester (1748). Bone china has been the standard English porcelain since about 1800.

*POTTERY GAZETTE AND GLASS TRADE REVIEW* incorporating *TABLEWARE*, MAY, 1965.

## POTTERY IN KUCHING

Ray Rose

We went to Sarawak for family reasons, and to find so much to interest a potter was an unexpected extra.

About five miles from Kuching, on the road to Simmangang where our New Zealand troops are stationed, we came upon a small Chinese pottery. A very primitive building, just a thatched roof on supports, housed the circular mounds of tramped clay, the small climbing kiln and the wheel. The clay pits and the huts of the family were at the back.

The pots, mostly cylindrical vases, flower pots and small bowls, were stacked around the entrance, presumably to attract passers-by; and a very attractive sight they made, with their stone-coloured glaze and fresh brushwork in blue or brown.

Such a wealth of pots, and the potter so smiling and pleased to show us how it was done although unfortunately we couldn't talk with him! The wheel was a very simple affair: a large fly-wheel shaped

like a flat bowl, with the throwing plate set down on it and a groove round the edge of the fly-wheel into which the potter put his right heel. Then, balancing himself by a rope from a rafter and standing thus over a cone of clay, he whirled the wheel. When it had gained sufficient speed he sat down on a low bench and threw the pots — five flower-pots to one spinning, so I counted. He kept his cutting thread around his wrist and — as each pot was finished — just a flick of the wrist, and the thread was free and the pot cut from the top of the cone. As he filled a plank with pots his assistant took them outside to dry and placed the next board ready. There was such a rhythm in their work.

Outside, drying in the sun, were numbers of beautiful jars from two to three feet high — large full-blown jars with narrow necks, for storing water. Each of them, for their form, would have drawn admiring groups at our New Zealand Show. There they sat in the sun, knowing that even if exhibitions were not their lot they would fill a useful place in someone's life.

#### The Sarawak Museum

The Sarawak Museum, set on a hill in very colourful gardens in Kuching, was built by the second Rajah of Sarawak, Sir Charles Brooke, in 1891. His intention was that "people from inside and outside Sarawak could come and see how the different peoples of Sarawak lived".

The Museum has certainly achieved this purpose. Even before one enters the building, one's attention is caught by two most interesting exhibits. One, a tall carved wooden post, is a burial pole; and the other, a large stone with a simple figure carved on it, is a replica of a stone at the mouth of the Kuching River, at Santubong, and is believed to have been carved there a thousand years ago.

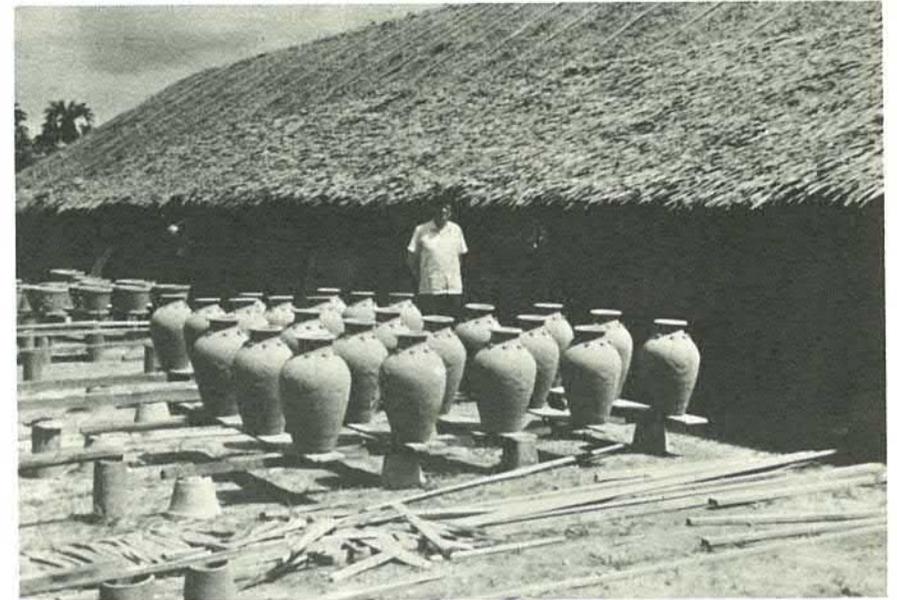
Inside the Museum there is a wonderful collection of pottery. Since more than one thousand years ago, Chinese junks have brought ceramics, beads, coins, iron and silk to Borneo — returning with rhinoceros horn, hornbill ivory, kingfisher feathers, spices and rattan.

In the Museum is a large case of celadons made in China from the Tang Dynasty, 600 A.D., to modern times. Some of the earliest celadons were excavated in Sarawak. We were told that even today in the Sarawak interior, in places almost inaccessible, there are large decorated jars and dishes which came from China in the early days. While we were in Kuching, a student going home for the week-end with the son of a Santubong fisherman, found some beautiful celadons on a shelf in the boy's home

#### Batu Lintang

Another interesting place, which we were fortunate enough to visit, was the Batu Lintang Teachers' Training College in Kuching. Here Susi Heinze uses her own skill as artist and teacher to develop the traditional crafts of her pupils, and the result is some very sincere and pleasing work. In a wild garden at the back of the College they grow plants needed for weaving and dyeing. There is also some carving in wood and stone and a hand-built pottery.

The Ibans powder and sieve their clay, and they mix it with water. They make their pots, using an anvil stone and a carved wooden beater with a handle. First they shape the clay into a cylinder, and then they beat the top of the cylinder to flatten it. Into this thickened top they insert a rattan ring of the size required for the mouth of the pot, and cover it with clay. This ring prevents the pot from losing shape when beaten. Then, sitting on the



Pots drying in the sun.

Iban design on Library at Batu Lintang Teachers' College.



floor with outstretched legs, they gradually rotate the pot with the stone inside it and the beater on the outside. When the pot is the required size it is decorated with incisions from the side of the beater and the rattan ring is removed. Now the lip must be finished with damp fingers.

The method of firing described to us by Miss Heinze was one she had seen used by the Ibans, or Sea Dyaks, whose locally made pots are still used for cooking rice. A pile of wood about three feet square and two feet high was prepared, and the pots put on and covered with branches. Glowing sticks were brought from the long-house and put underneath. After about an hour the fire would die down and the pots while still hot were dipped in 'samak' — the pounded bark of the mangrove tree mixed with water. Immediately afterwards the pots were put back in the ash. This helped to make them waterproof and gave them their attractive colour.

### The Library Mosaics

Most interesting at at Batu Lintang were the students' own mosaics, decorating the brick walls of their seven-sided library building. The mosaics were done in different coloured calcites collected from the site of the old gold-mine near Bau — towards the Indonesian frontier. Students of various races — Sea Dyaks, Land Dyaks, Malays, Chinese, Kayan (hill people) and Kelabits from the interior — have drawn on their own cultures to create the designs.

One of these showed two Chinese dragons fighting for the pearl of perfection, and another a Kayan symbol for their guardian spirit, normally used on their shields. The calcite, in different shades of grey to black, and white, has been stuck to the brick walls with cement and the finished effect is most pleasing, especially when the calcite designs sparkle in the rays of the setting sun.

## THE HIGH STREET GALLERY

### Lower Hutt

Our new Gallery at Lower Hutt has continually on display a range of New Zealand Pottery.

Potters are welcome to come in and browse.

The Gallery's Director, Mr Bruce Young, would be interested to discuss with potters the display or purchase of their work.

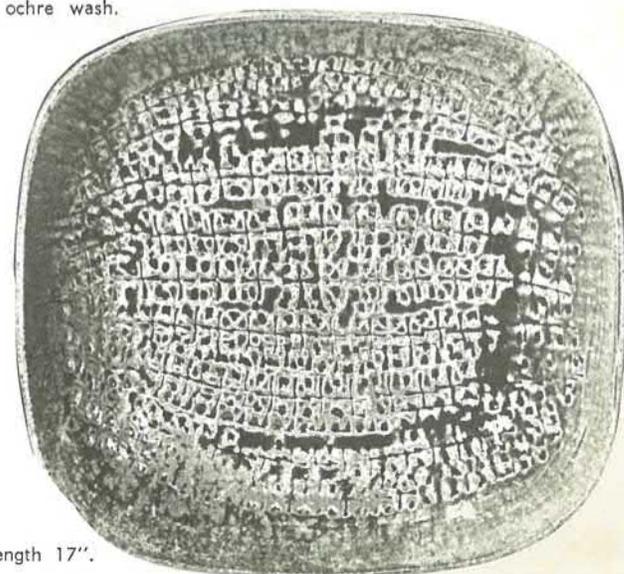
THE PICTURE GALLERY LTD.  
93 High Street



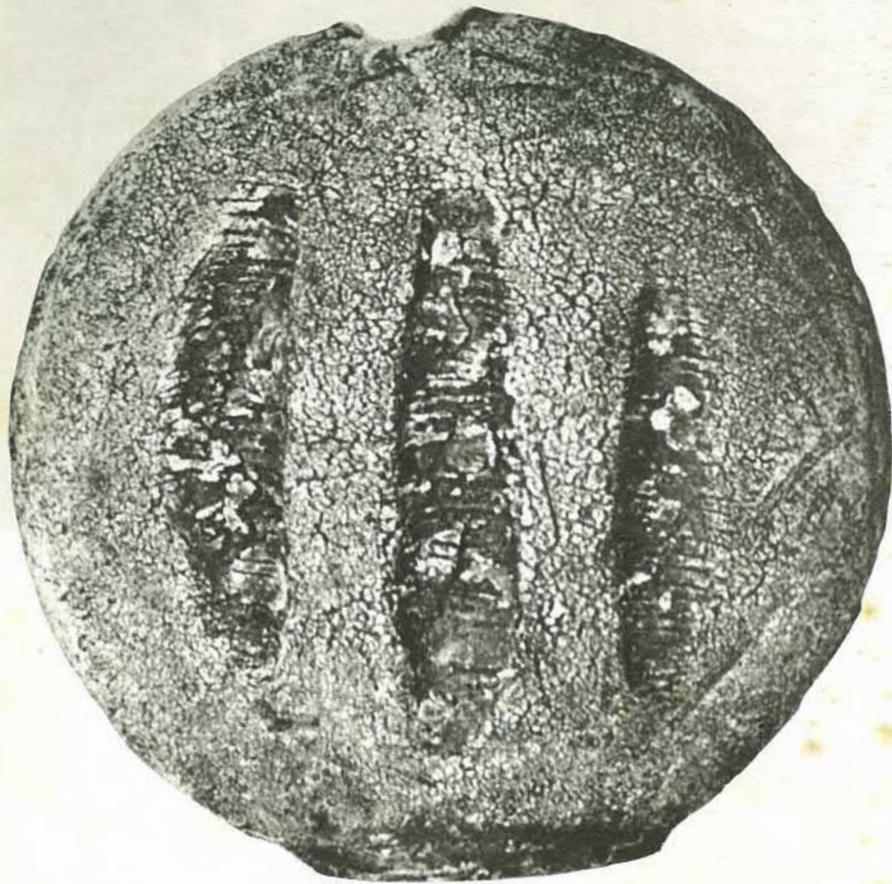
Winejars, unglazed, impressed patterns, ochre wash.  
Hts. 10"—16".

### LEN CASTLE

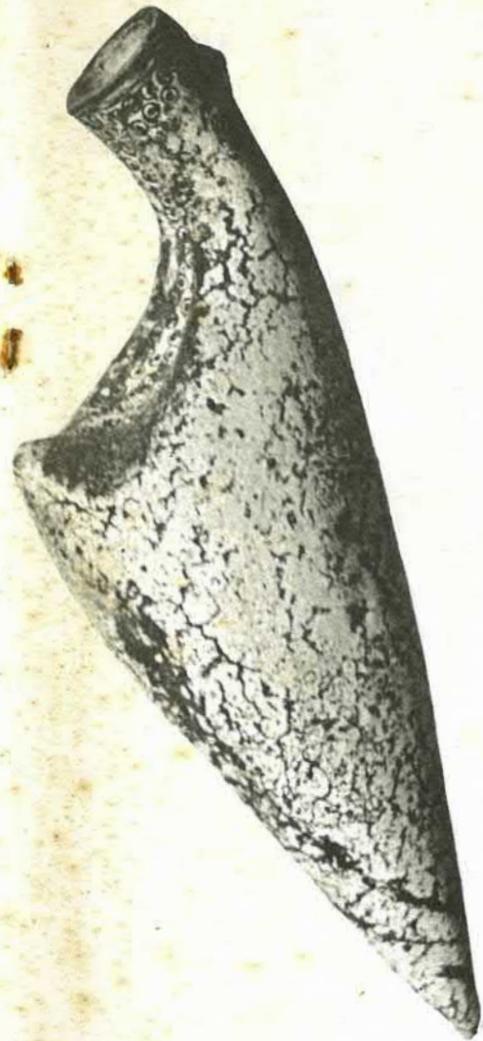
photographs Terry Barrow



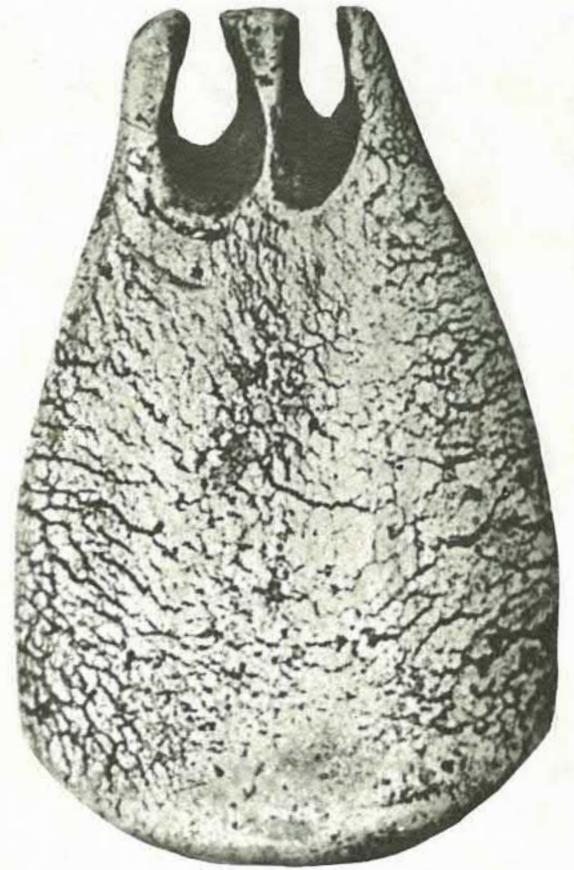
Dish, impressed pattern, wood ash glaze. Length 17".



Discoid vase, unglazed, pyrolusite wash. Ht. 14".



Hanging 'horn' bottle, unglazed, pyrolusite wash. Ht. 14".



Branch and flower holder, unglazed, pyrolusite wash. Ht. 6".

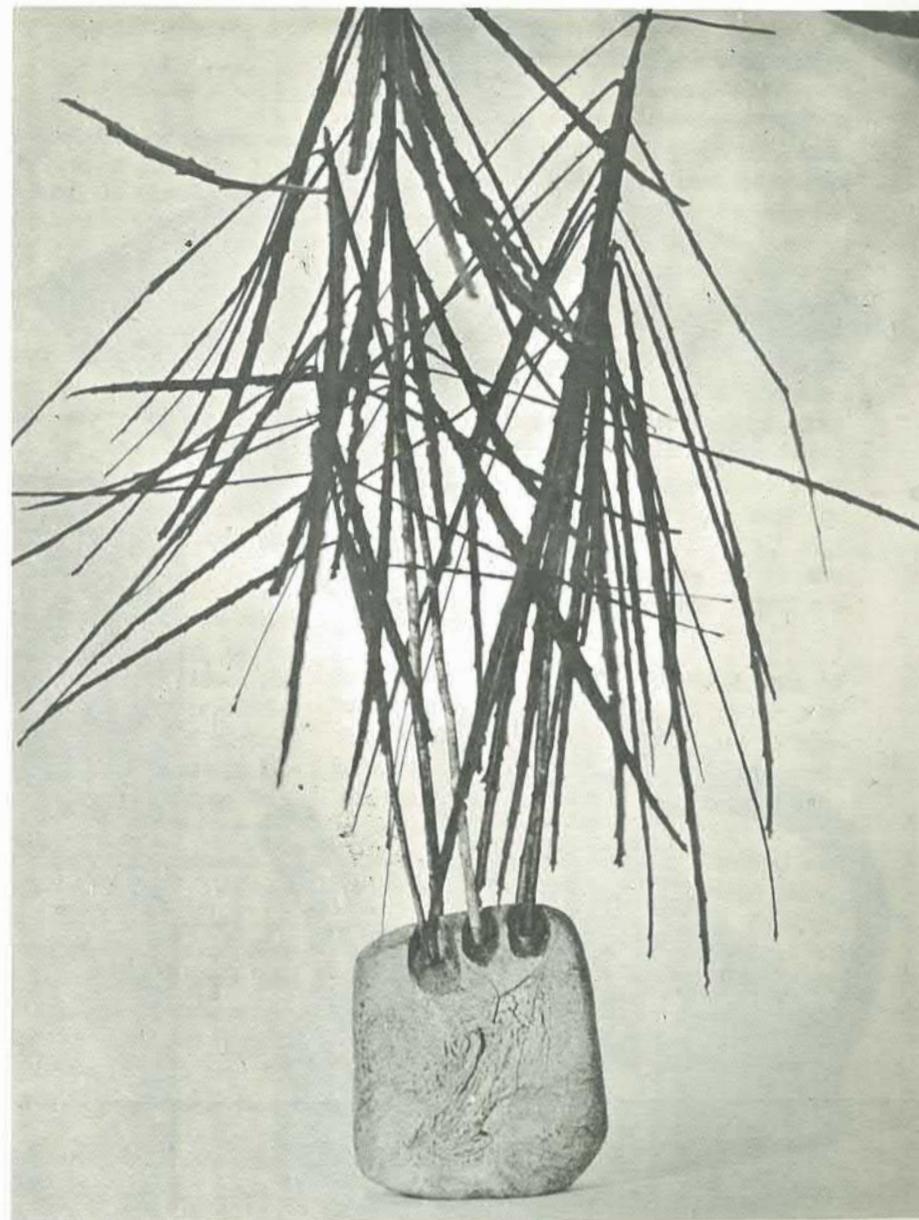
POTS BY **LEN CASTLE**

Photographs Terry Barrow



**LEN CASTLE**

Flattened bottles,  
unglazed. Hts. 4"-6".



**LEN CASTLE** Branch holder with Lancewood, unglazed. Height 9".



**LEN CASTLE**

Bottle vase, press moulded, wood ash glaze. Height 7½".  
Coffee pot, double glazed. Height 6".

**LEN CASTLE**

Review of an exhibition of recent work by Len Castle held at the John Leech Gallery, Auckland, 22 October-5 November, 1965. Opened by Dr. Denis Hanna on 21 October.

Leonard R. Castle was born in Auckland in 1924. He was first introduced to pottery making at Auckland Teachers' College in 1947, and from then on until his departure to England in 1956, where he worked at the Leach Pottery, he was largely self-taught. At first he laboured in the "do-it-yourself" New Zealand tradition, and the independence of this early work has contributed to its character.

At the Leach Pottery he learned the disciplines of making a vast number of non-nonsense pots, and the personal association with Bernard Leach helped him crystallise his ideas about the meaning and purpose of pot-making. Bernard Leach gave to Len Castle his philosophy of work just as Shoji Hamada provided him with a demonstration of fully integrated craftsmanship. In 1961 the English Journal "Pottery Quarterly" (Number 27) published my article on six stoneware potters of New Zealand. In this I pointed out that Len Castle is the pioneer of New Zealand stoneware potters in that he was the first to make high temperature wares in the Leach-Murray/Hamada-Kawai tradition.

The Leach Gallery exhibition is an indicator of Len Castle's recent work and I believe it is the first exhibition in which he has given full expression to his talents. I say this because I believe Len Castle as a potter was trapped between two worlds: the world of the craftsman-potter who must produce domestic ware day in and day out, and the world of the artist potter whose function as pot maker is expressive and

intuitive. In his exhibition the true nature of his personality is shown, to put it plainly, he has made a breakthrough! A portion of the exhibition is given to domestic ware and it is obvious that he makes first class bread and butter pots, but his heart is in creative work rather than in repetition. Although we may associate the style of Len Castle with the Leach-Hamada school, I think he is in fact nearer to the Murray-Kawai way of potting. This means that his concern is with what a pot does to a person rather than what a person does with the pot. Both ways of approach are doubtless right, the important thing is to find out which way is the right way for one's own self.

In this exhibition Len shows us in the clearest of terms that he has found his way.

What is the outstanding characteristic of his creative pots? Personally I think it is their nearness to nature. They are in harmony with the rhythms of natural forms, and their shapes and textures suggest rocks, animals and plants: they relate to the organic rhythms of the New Zealand environment rather than to any foreign place. Geological forces are expressed through them, the geologic mechanical forces of nature from the cutting action of a single grain of sand to the splitting of mountains. The contrast of the microscopic and the macroscopic is conveyed. This is no suggestion that there is a conscious desire to make natural forms or to imitate the ageless quality of nature, it is simply a quality of the work. Len Castle is obviously fascinated by the characteristics, subtleties and behaviour of clay during the processes of making and firing, and he deliberately makes use of the qualities of his materials and the virtues of his craft to achieve certain ends. Deliberate and creative use of technique is seen in his forming of pots by rolling, folding, beating, and cutting of

solid lumps or sheets of clay which pucker, crack or flow under the varying rhythms of the hand. Recognition of features in clay which are paralleled in nature are inevitable to the eye of the sensitive artist.

In part this method of work is due to his background. Len Castle was university trained in natural sciences (namely biology, botany and geology) then worked for a number of years as a teacher. His feelings, however, were more to him than his conscious thoughts, and in past exhibition work we see evidence of a struggle between the thinking man and the feeling man. Fortunately the feeling man was victorious.

We all know people who are excellent in all things technical, but uncreative. Some have little technical skill, but creative skill, yet they succeed. Len Castle's work is a happy combination of technical skill with creative imagination.

Len Castle is a man who lacks time sense. It allows him to give tremendous concentration to whatever interests him at the moment. His devoted attention to detail and the ability to study what appears to the ordinary observer insignificant is, in part, the secret of his knowledge and highly developed technique. From this habit of mind also emerges the lack of any feeling of urgency in his pots, for many of them seem carefully considered.

Wheel-thrown forms, which have predominated in earlier work, have given way to free methods of forming. Len Castle enjoys the spontaneity of wheel-thrown pots, but he now appears to prefer other methods. There is an awareness of the fact that men were making fine pots thousands of years before anyone thought of spinning clay on a wheel. Certain materials appear to have

been adapted to certain moods: masculine gritty clays are used for some pots, while feminine, highly plastic clays are reserved for others. Glossy, hard glazes are generally used for domestic wares, but dry glazes and textured unglazed surfaces are favoured for imaginative work. Impressed seals have been used extensively in decorative treatment.

This exhibition demonstrates that a well trained New Zealand artist, given favourable circumstances, talent, and the will to work, can make a great intuitive leap.

---

## ARTS COUNCIL AWARDS FOR 1966

This year the Arts Council awarded five fellowships, of these two were given to potters Len Castle and Roy Cowan. On his award Len Castle is to make advanced studies of ceramics in Japan and America, and Roy Cowan intends to use his to further his research into kilns and raw materials and the techniques of firing large pieces in this country. We will all benefit greatly from these projects, as both potters are known for their generosity in sharing their discoveries. It is good that the years of hard, disciplined, creative work of both of them have been rewarded in this way, and good also that the Arts Council has recognised the personal merit of these potters, and through them, the solid achievement of the pottery movement in New Zealand.



**Roy Cowan**

The Queen Elizabeth II Arts Council's award to Roy Cowan of a fellowship will delight all potters. Our delight will in part be selfish, for Roy has always been quick to share his discoveries. That one who has given so much should be rewarded is only just.

For the last thirty years Wellington Teachers Training College has been a remarkable institution in which many young people have found that they possessed unsuspected creative abilities. Roy Cowan was one of these people. Son of James Cowan, the historian, Roy was even then widely read and original of thought, but it was Roland Hipkins, the art lecturer at Teachers' College who revealed to Roy that he had the capacity to be an artist, but the war meant that much had to wait.

After the war he returned to teaching for a period, and then joined the staff of

School Publications. There he met another artist, Juliet Peter, whom he married.

In 1953, Roy was awarded an Association of Arts Societies Scholarship and he and Juliet spent the next two years in London, studying drawing and painting, lithography and pottery. On their return they set up their studio and pottery at Ngaio. Roy returned to work at School Publications until 1959, when he became a full-time potter.

As a potter Roy has shown the same characteristics I have always found in him as a person. In his painting and lithography Roy has always seemed to me to be searching for an expression of the organic nature of life and landscape. There is an impish wit which sometimes spills over into his serious work. He has always had a passion for big things. (I remember his intimidating Wellington taxi-drivers with two-and-a-half tons of monstrous fine motor car.) So with his pottery.

Roy has never been content to accept the conventional wisdom. Always he recognises tradition, but while working within it he goes back to first principles. This we have seen in his experiments with glazes, bodies, kilns and firing techniques. In the last two Roy has produced answers which differ significantly from the traditional ones. Roy's enquiries into the mathematics of gas flow have produced kiln and burner designs which, through the "Potter", he has shared with us.

Roy's massive architectural pots are again something new, something produced by a man with an underlying feeling for the structures of the land, something, I think, peculiarly New Zealand. They are virtuoso displays of firing technique, but their major importance lies in the forging of a new idiom.

I have recorded my regard. Roy can be irascible too, if he feels the occasion calls for it, but the kiln explosions are infrequent; the mature Cowan is a little shy, generous of his knowledge, kind and encouraging to the beginner, restless and enquiring of mind. Roy Cowan is a man who is always searching for the answers to old questions, and more important, searching for questions which most of us do not know exist. That the Arts Council should aid his searching is a fine and sensible thing.

W. Easterbrook-Smith



## THE ARTS COUNCIL AND EDUCATION

### What New Zealanders should expect from their Arts Council.

Sir Leon Bagrit, the eminent scientist, in the third of his series of Reith lectures on automation said, "It is vitally important during the next decade to increase the grants made by the Government to the Art Council and to other bodies with similar aims, and to increase them on a very big scale, not only to promote the arts as an activity, but to encourage the understanding of them simply by the process of enjoying them. You cannot have these arts in a state of vigour and health without the participation of a large cultured public, and if you create this public by arousing the interests of young people in the arts, the satisfying of these intuitive desires would lead to a considerable development in the creative arts themselves. They only flourish when the market is there for them. It is the duty of the government to see that the market is available and well provided with funds."

To my mind the first essential for a group of people responsible for promoting the arts, is that it be comprised of people who are themselves aesthetically aware of the needs of a community isolated from the cultural centres of the world. Those on such a council need to recognise the importance of consulting experts in the various artistic fields, not just anyone who happens to be an architect, who plays the violin or who is the head of an art school. There are very few real experts in this country especially in the visual arts. We have been fortunate in the past few years to have visits to New Zealand by great men in the field of art, such as Sir Herbert Read, Niklaus Pevsner, and Sir Basil Spence, who

were invited to come here to give the Chancellor's Lectures for the University.

More contact with top ranking men in the arts through radio, television and public lectures given much newspaper prominence would help greatly in setting much higher standards in N.Z. It must be realized that the ignorant and inexperienced, who set themselves up as art critics for the radio or newspaper are not the real experts.

One of the significant things that have happened recently is that the Government was farseeing enough to consult with Sir Basil Spence on the extension of Parliament Buildings. We now have the hope of seeing at least one building in New Zealand that will be a work of art by a great architect of our time, of which New Zealanders will be proud. Had the Anglican Cathedral authorities had the humility and the vision to consult an expert we might have been able to commission some of our finest artists to produce an antipodean equivalent to Coventry Cathedral.

It would seem to me that the most urgent work to be undertaken by the Arts Council is one of educating the public. What is the school environment of the majority of our children? There is precious little to delight the eye. No adult can be expected to have progressive attitudes, understanding or sensitivity to works of art, such as the sculpture of Barbara Hepworth, unless they have been exposed to works of art from childhood.

It would be good to see at least some money set aside when a new school or College is built, for the purchase of a piece of sculpture for the quadrangle, a mural, a stained

For further particulars of all models write to the New Zealand agent:

Miss Mavis Jack, 62a Tinakori Rd., Wellington N1.

Top-loading and front-door opening BRICESCO kilns still available to those with overseas funds who are in a position to procure No Remittance licences.

Elements, shelves and props for BRICESCO kilns still procurable.

**BRICESCO**  
**ELECTRIKILNS**



**BRITISH CERAMIC SERVICE CO LTD**

glass window, by someone of the calibre of John Piper, or pictures by good contemporary artists which the children would see every day. The Arts Council could advertise these needs, and either purchase or subsidise works by some of the finest artists and put them in schools and Colleges, and discuss these works on radio and television and in the press to help them to be viewed intelligently and with a growing awareness of their intrinsic value. The Arts Council has a duty to help newspapers to have enlightened editors and critics. It is quite devastating to the progress of art, to see how much the public is misguided by newspapers, a telling example is that of the Kelliher landscape competition for the Dominion Breweries calendar. N.Z. will never grow in art appreciation while the blind continue to lead the blind in knowing what art is all about.

Sir Leon Bagrit in his Reith lecture No. 3 said this: "It is essential in my opinion that all children especially in their teens, should be exposed to artistic and musical and other cultural influences as widely and as frequently as possible. This is not a luxury to be reserved for a fortunate elite, it is an absolute necessity."

It is good that the Arts Council has in the past brought exhibitions to New Zealand. It

### Forthcoming Exhibitions

New Zealand Academy of Fine Arts, Sculpture, Pottery and Graphic Arts Exhibition, Wellington.

Receiving date, Tuesday, 2 August, 1966.  
Private View, Friday, 2 September.  
Season, 3-24 September, 1966.

is important for us in N.Z. to see many exhibitions of contemporary art, but here again guidance by the experts is essential. No purpose is served, except to confuse the public by bringing in exhibitions of "pop" art of which we saw some examples in the James A. Michener collection shown in the National Gallery last year. Hamish Keith told us that they had a message for us and wrote, "You should stand or sit quietly in front, and hear what the painting has to say". Sir Herbert Read in a recent issue of the Studio International writes of these self-same painters, "These 'pop' artists succeed in embarrassing the critics, and that may be one of their aims. To give serious consideration to their antics is to fall into the trap they have laid for us. The genuine arts of today are engaged in a heroic struggle against mediocrity and mass values, and if they lose then art in any meaningful sense is dead. If art dies then the spirit of man becomes impotent and the world relapses into barbarism."

A wonderful thing happened for N.Z. when an Arts Council was formed and money allocated for the furtherance of art in N.Z., but I would like to see more evidence that the Arts Council sees the need, and is making determined efforts to educate and guide the public.

Doreen Blumhardt

POTTERY IN AUSTRALIA, a magazine published by the Editorial Committee of the Potters' Society of New South Wales, may be obtained from the Editor, 30 Turramurra Avenue, Turramurra, Sydney.



## NEW VISION

8 HIS MAJESTY'S ARCADE, QUEEN STREET, AUCKLAND, NEW ZEALAND. PHONE 42-505

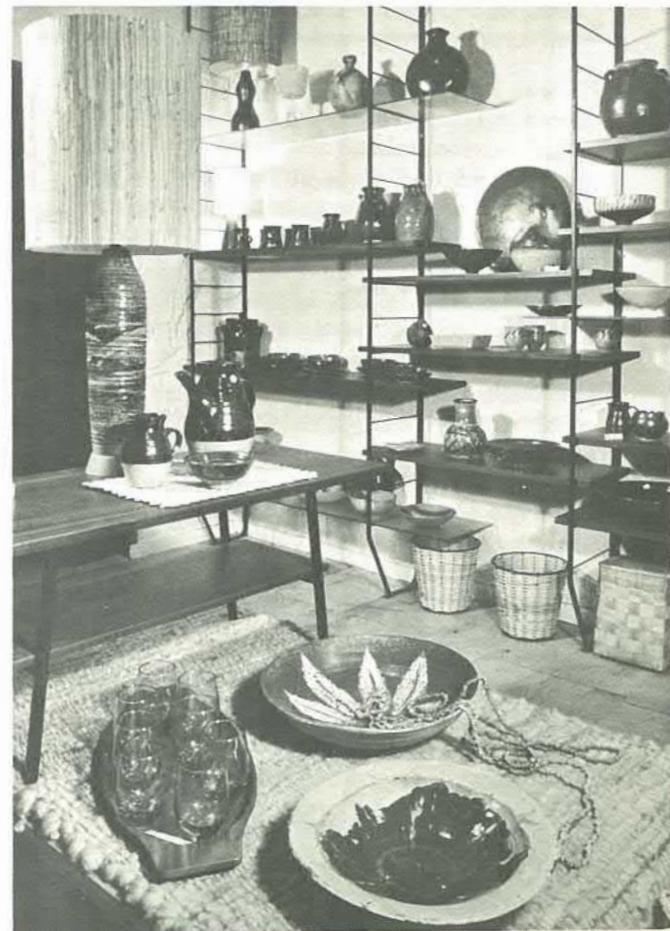
**NEW VISION ART CENTRE** was started in 1957 in Takapuna as a very small venture. As far as we know it was unique in its nature. The idea was to bring to the notice of the public the high standard already attained in the New Zealand crafts, to encourage the craftsmen by building up a market for their work, and to aim for the highest possible standards of work.

With the help of the artist-craftsmen (and women) and the enthusiasm of a small select public the shop became a great success. In the beginning of 1959 city premises were found in Auckland in His Majesty's Arcade, and since then we have never looked back. We followed with great pleasure the growth into maturity of the New Zealand crafts.

In 1965 a large gallery was opened in conjunction with the shop. A number of successful exhibitions of pottery and crafts have been held, marking the fact that the crafts in New Zealand have reached a new status worthy of international comparison.

Stock comprises:  
Studio pottery  
Weaving  
Handprinted fabrics  
Wooden ware  
Copper and enamel ware  
Creative jewellery in ceramics, wood, copper and silver  
Basketry

The gallery carries original paintings, graphics, sculpture and studio pottery of the highest standard.



## ELIZABETH LISSAMAN, POTTER

Admitted to the New Zealand Society of Potters as a Life Member at the Second Annual Meeting held in Auckland on the 7th November, 1965.

When only a schoolgirl, Elizabeth Lissaman started potting on her father's farm at Seddon, Marlborough. She still has one of her first pieces, a pinch pot decorated with a bird design with natural earths and clays used for colour. This was fired in a kiln, built in 1920 with the help of her father and brothers, and stoked with coal.

It was impossible to find any information about making pottery in New Zealand, so after leaving school she went to Sydney to try and find some tuition. Here again she was disappointed, because the only course available was a five year one at a technical school. She then read for information in the Sydney Libraries. From this she learnt where to obtain oxides and glaze materials and then went home to Marlborough. After building a brick kiln and a wheel she taught herself by trial and error for two years.

In 1925 she held her first small exhibition in Blenheim. This was followed two years later by a much larger one at the Christchurch Winter Show. This created much interest and led to a demonstration at the opening of the new D.I.C. in Wellington. People came from far and wide to watch something not seen in New Zealand before, a potter at work. The New Zealand Manufacturers' Association wrote congratulating her on "initiating a brand new New Zealand industry". By 1928 the job of supplying handmade pottery to shops in Christchurch and Wellington was beginning to tell on her original kiln, and an oil-burning one was imported from England.



ELIZABETH LISSAMAN 1966

In her hand she is holding probably the first piece of New Zealand made studio pottery. Made in 1920 it is decorated with earth colours in a pattern of birds and once fired with coal.

Over the years a great many pupils have passed through her hands, one of the first being Elizabeth Matheson, who went to Marlborough on her return from England in 1931.

After her marriage, as Mrs. Hall, she moved to Levin, where she potted and taught at the College there for seventeen years. For some years she was a regular exhibitor at the New Zealand Academy of Fine Arts, in fact, in 1931 she was the sole exhibitor of pottery.

Now living in Tahuna, near Morrinsville, Mrs. Hall has a pleasant, sunny workshop equipped with an electric kiln and wheel. Some of the parts of the original wheel

are incorporated into this present one. Her clay, which fires a rich red and vitrifies at 1100°C, is found on the property, and she still likes to use local earths and clays for colour and decoration. Teaching has become her major interest and in Morrinsville Mrs. Hall has a most enthusiastic group of pupils and ex pupils. For many years she has held evening classes and weekend schools in Hamilton, Morrinsville and Waihi. Her theory of teaching is to pass on the technique and then encourage her pupils to follow their original thoughts in design, forms and style. One of her sons

has potted since he was five, and is now a member of the New Zealand Society of Potters.

Elizabeth Lissaman must have been one of the first women to make pottery in this country. A very pleasant person, she has made pottery a large portion of her life, and many people have cause to be grateful for her help and encouragement over the years. The contribution that a woman of this calibre all her life has made to the pottery movement in this country is one of the reasons for its present strength.

MARGARET MILNE

## POTTERS

Warren Tippett, formerly of Christchurch, has emigrated to the Auckland/Coromandel area.

Maxwell Gimblett and his wife, Barbara, are now living in San Francisco at 29A Guy Place, after a summer teaching experience in Ontario with 500 children. They are now working hard, Barbara studying Folklore and Maxwell deep into his drawing and painting. The life is good, but somewhat isolated, and they would welcome any kindred spirits from this country.

Cecily Gibson, formerly of Kyoto and now of Canberra, has settled into her own small house there. A few weeks ago she opened "The Pot Room", where people can come, look and buy if they wish.

Nancy Patterson, the American potter whose work at the Peitou Ceramic Works, Taipei, Taiwan, was first reported by us in Vol. 4 No. 2, December 1961, is now the President of Iron Mountain Stoneware, Laurel Bloomery, near Damascus, Tennes-

see, U.S.A. In Taipei Nancy's work consisted of developing formulas and firing cycles as well as production procedures in order to build up an export trade in ceramics utilising raw materials readily available in Taiwan. New designs suitable to the American market were developed, and relatively unskilled Taiwanese were taught to manufacture the new products. Now in her own country, with the backing of a businessman originally from the Iron Mountain area who has built up a large concern in Japan exporting high quality sail boats to the U.S.A., and with the help of her sister, many other people, and Government Departments, a large ceramic factory has been established. Once the factory was built the first task was to train people to work in it. 409 applications rolled in, and careful screening reduced this number to 45, who have been given careful training in a ten week programme. These employes are people who before were without hope of employment. Now they have learned a trade that is more than a trade—it is a craft, and no machine can ever usurp these

particular jobs, because no machine can ever reproduce the handmade quality of stoneware. The raw materials come from the nearby Appalachian Mountains and the hope of employment and the learning of a trade has brought new life to this somewhat depressed area of the U.S.A.



Trade Mark of the Iron Mountain Stoneware Company. Developed from ancient symbols it signifies:

- (1) By the square or border, the four elements: earth, air, fire and water; also a kiln.
- (2) By the triangle, a fire.
- (3) By the vertical line and arms, man.

Gwyn Hanssen is an Australian who ten years ago started potting as a student of Ivan McMeekin, then establishing the Sturt Pottery at Mittagong. After three years there she went to England, where she worked for nine months with Ray Finch, in Gloucestershire, and for five months at the Leach Pottery. After that she spent a summer with Michael Cardew at Wenford during one of his leaves from Nigeria. Later, in London, she started her own workshop, where she worked for four years making domestic stoneware using an electric kiln. More recently, she has been working in Cornwall, in Michael Cardew's pottery, while she was away in Africa. She found this most exciting, as she had always been interested in wood-firing kilns, and the large Cardew kiln was quite a challenge. Three years ago she spent a summer working among traditional potters at La Borne, in central France, where there is still a living tradition of wood-fired raw-glazed stoneware. So interested is she becoming

in open firing with solid fuel that she has bought a little house in France, not far from La Borne, and will build a kiln there this summer. There is still an enormous amount to be learnt from the potters there, and there are fuel and stoneware clays in abundance. While in Australia on a return visit Gwyn Hanssen is doing her own research for a term at the University of N.S.W., where Ivan McMeekin is now senior lecturer in the ceramic department. She intends to work with enamelled porcelain.

While returning to Europe Gwyn Hanssen plans to spend the month of June in New Zealand and it is hoped that a lecture and teaching tour may be arranged for her.

Milton Moon of Brisbane has been awarded a Winston Churchill Fellowship to study overseas for six months. He and his wife and son leave on April 1 for the U.S.A., England, the Continent, and home via Persia. The award has been made for Milton to study ceramics as applied to Art Education and to the field of Architecture. He says, "It is such a terrific help to see what other people do — they represent bridges where one would normally be swimming against the current".

Emma Knuckey, of Auckland, has been visiting her son Peter, who is working with Takeichi Kawai in Kyoto. Takeichi and his wife are well, and the work goes on.

As well as pottery, Peter studies Tea Ceremony, Ikebana and Sumi-e. The art of Sumi-e is excellent training for a sure and steady hand with the brush. At Kawai's, Peter makes plates and teapots by the dozen, breaks them up and starts again. He takes full part in the Japanese life, and has many interesting and talented friends, both Japanese and European.

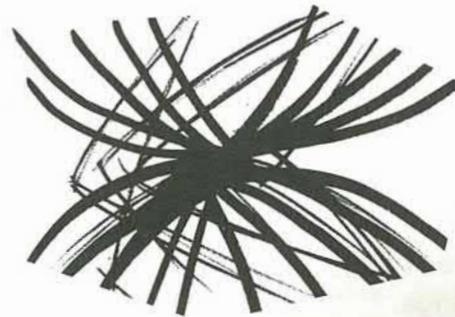
Harry Davis, of Crewenna Pottery, Nelson, has been invited by the Canadian Guild of Potters to do a tour over there next April and May. There will be a selling exhibition of over 300 pieces at Toronto, and in addition Harry will take with him a small exhibition which he will use in connection with the twenty-four "workshops" to be held in centres from Vancouver to Halifax. He will discuss various approaches to potting and deal with a wide range of technical problems and their solution. May Davis, assisted by apprentice Simon Pearce, will carry on at Crewenna Pottery during Harry's absence. He expects to be back at the beginning of July.

Dr. Terry Barrow, Curator of the Maori and Pacific Collections at the Dominion Museum for many years, left New Zealand with his wife Joy last January to become anthropologist to the Bishop Museum, Honolulu. An intimate friend of both Bernard Leach and Shoji Hamada, Dr. Barrow has been associated with the pottery movement in this country since stoneware was first introduced. His fine collection of ceramics, his excellent library, and his help and encouragement have stimulated the development of many potters. The Bishop Museum, a centre of

Polynesian studies, should offer excellent opportunities for research, and we hope that Dr. Barrow's presence there will lead to greater contacts between Hawaii and New Zealand.

Wanda Garnsey, Editor of Pottery in Australia, is at present visiting Japan with her daughter Julie.

Peggy Dickinson, potter from the U.S.A. who visited New Zealand last year and then went on to Fiji for some months, was able to do some excellent research work into local potting methods there, helped greatly by Bruce Palmer, Director of the Fiji Museum, and a grant from the National Research Museum of Washington. In our next issue we plan to publish the results of some of this research. Peggy and her family have now returned to the U.S.A. She says, "After three weeks at home I'm ready to immigrate — I don't know where all these people are rushing with their money clutched in hand. America seems frantic, noisy and expensive. Also it's odd to see all these colourless faces! Here everyone talks about war and no one listens to anyone else, pro or con. Anyway, pots go on for ever, even if they're urns."



## NOTES ON OUR ADVERTISERS

W. D. McGregor Ltd. is an Auckland firm of engineers which specialise in electric furnaces including pottery kilns and their allied equipment. They have been manufacturing kilns for twenty years and have supplied many kilns to schools, colleges, institutions and to studio potters throughout New Zealand.

They have a range of standard kilns or can supply to customers' specific requirements. They produce electric kilns suitable and proved for burning to 1300°C, and they back their products with efficient servicing and stocks of spare parts.

With the discovery a few years ago that Silicon Carbide shelves were available from

the Nonporite Co. Pty. Ltd., Melbourne, Australia, one of the problems of New Zealand stoneware potters was solved. Indeed, many new kilns have been designed around the 16" x 12" shelf size. The cost of these is approximately £3 each but they are a worthwhile investment. New Zealand agents for Nonporite are J. H. M. Carpenter Ltd., Auckland. It is necessary for them to make an import licence application for every order and this fact, combined with an approximate three months delivery date in Australia, means that there is a delay of at least four months before the shelves arrive. It would simplify this procedure if potters would bulk their orders or else local Associations forward group orders to J. H. M. Carpenter Ltd.

---

### C.C.G. INDUSTRIES LTD., P.O. BOX 3724, AUCKLAND.

Corner Kent & Crowhurst Sts., Newmarket. (Upstairs Kent St. entrance Exide Battery Bldg.)

Write for our No. 2 Catalogue giving full details of our Podmore range of clays and ceramic materials.

Three grades of prepared clay regularly stocked:

B34/1	Buff Clay Plastic (with 10% grog)	Temperature 1100°C–1150°C
B32/1	Stoneware Plastic	Temperature 1250°C–1300°C
B33/1	Red Terracotta Plastic	Temperature 1020°C–1040°C

Special prices for ½ ton and 1 ton lots.

Also try Podmores range of Glazes, Body Stains and Frits, especially their well tried David Leach range.

## BOOKS FOR KEEN POTTERS

CERAMIC DESIGN by John B. Kenny

63/- London

Here is a "how to do" and a "what to do" book in one. Complete instructions for methods of forming and decorating ceramic ware are given, with step-by-step photographs to guide the designer along the way.

CLAY AND GLAZES FOR THE POTTER by Daniel Rhodes 50/- London

A book for the potter, student, teacher, designer, collector, or industrial ceramist who wishes to know more about the materials of the craft of pottery and the ways in which the many varied colours and textures in ceramics can be achieved. This is a practical book, and for the first time the facts about clays and glazes and the principles governing their use are clearly described in complete and easy-to-understand form.

A BOOK OF POTTERY: From Mud into Immortality  
by Henry Varnum Poor

42/- London

America's foremost ceramic artist presents his philosophy of pottery, his methods of work, his cherished techniques for making and decorating all kinds of pots and for ceramic sculpture.

Published by SIR ISAAC PITMAN & SONS LTD.

Available from all booksellers.

---

## EXHIBITIONS

New Zealand Artist Potters organised by the Manawatu Society of Arts, held in the Palmerston North Art Gallery, October 11–29, 1965.

The exhibitors by invitation were: Doreen Blumhardt, Len Castle, Roy Cowan, Simon and Christine Engelhard, James Greig, Jack Laird, Helen Mason, Juliet Peter, Mirek Smisek, Peter Stichbury. Local exhibitors were: Noeline Thompson, Piet Radford, Barbara Taylor, Zoe Bendall, Dorothy Abraham, Peter Wilde, Peg Jackson, Lil Coombe and Audrey Lissett.

The aim of the exhibition, originated by Professor Keith Thomson of Massey University, was to make pottery more personal and alive to the buyer of it. In opening the exhibition he said: "Normally a person buys a piece of pottery in a shop and does not know who is the maker, where he is from, or anything about him. However, at an exhibition such as this, the buyer can find out these facts and therefore obtain something which has more meaning and individuality." Each of the main exhibitors was given an alcove in which his work was

excellently displayed. Handlettered black and white posters gave the history and the aims of each potter together with his photograph. The potter was asked to send a group of work which hung together and which pleased him as an example of what he was trying to do. The whole idea obviously appealed to the public for sales were excellent and the exhibition was most successful in attendance.

(We feel that the whole idea behind this exhibition could do with careful consideration by us all, and could well be symptomatic of a new trend. Ed.)

**Noeline Thompson, Pottery, Pauline Carter, Jewellery, Gladys Eastwood, Painting, Donald Neilsen, Painting. December 5-12. At the home of Noeline and Donald Thompson, Upper Plain, Masterton.**

"Pottery commits a person at every level. It's no use saying 'I love doing it', in the same way that you say 'I love a certain person'. That just means you haven't thought about it. Love is an obsession. Pottery can become an obsession, but you love to work at it. There is no built-in biological urge to mould great dollops of clay. And just as well! But there is a basic urge to create and almost any material will do. Why pick on clay? It's elemental, primitive and dirty. Perhaps that's just the reason! When I knew it was possible for any ordinary person, given some tuition, to make pots and fire a kiln, I was in business. But alas, the chasm between desire and performance. I spent a year in a wilderness of aggressively unco-operative clay and of kilns either too hot or too cold, and with tutors who knew little more than I did. I was eventually rescued from the

slough of despond by Jack Laird, who was at that time the Director, of the Art and Design Centre attached to the Palmerston North University. My serious pottery started at this time. I felt at last that in my own humble way I was getting somewhere, although where that 'where' will lead, only the Gods know." Noeline Thompson.

**Commonwealth Ceramics and Textiles, Design Centre, London, September, 1965.**

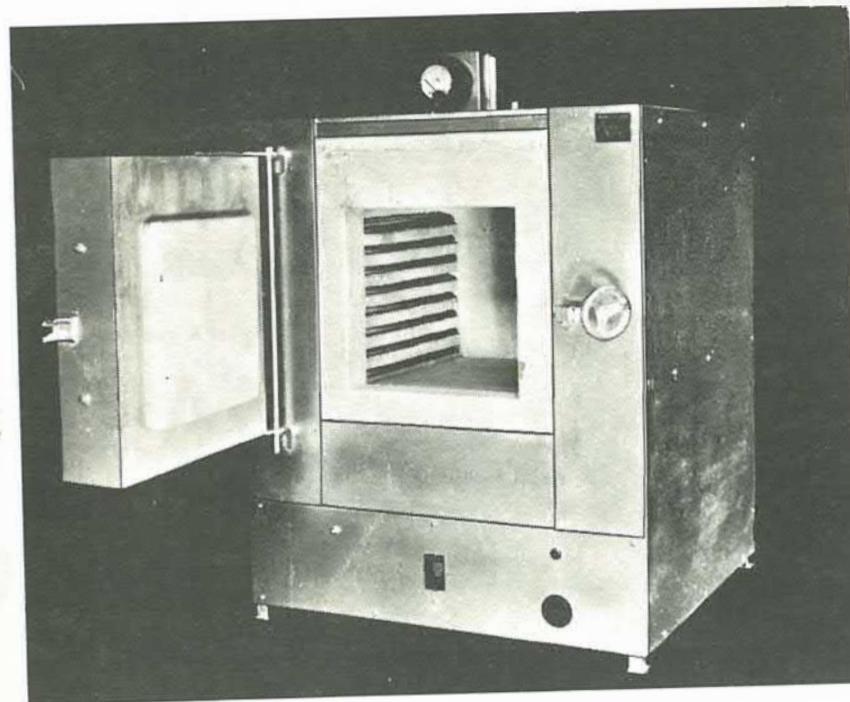
"We are pleased to be able to say that the New Zealand contribution was, generally speaking, of a very high standard. We formed the impression, from a fairly close examination of the items displayed from other countries, that the New Zealand contribution was at least equal in quality, and that a number of the New Zealand items displayed were superior to those from the other Commonwealth countries."

Extract from a report by the New Zealand High Commission

### EXHIBITIONS

**In this issue, instead of publishing exhibition reports, we have used the potters' own words to illustrate the ideas behind the work.**

**Would potters and gallery owners kindly supply details of exhibitions held. Invitations, reports and reviews and photographs are wanted. Photographs such as those of Len Castle pieces in this issue are usually more effective than general views of exhibitions.—Ed.**



We manufacture a range of Electric Kilns specially designed for use in schools, Colleges, Industry and for the Hobbyist. 'McGregor' kilns have been manufactured since 1946, and are built from the finest materials and workmanship. Their expert design and construction are the result of long experience in this field of manufacture.

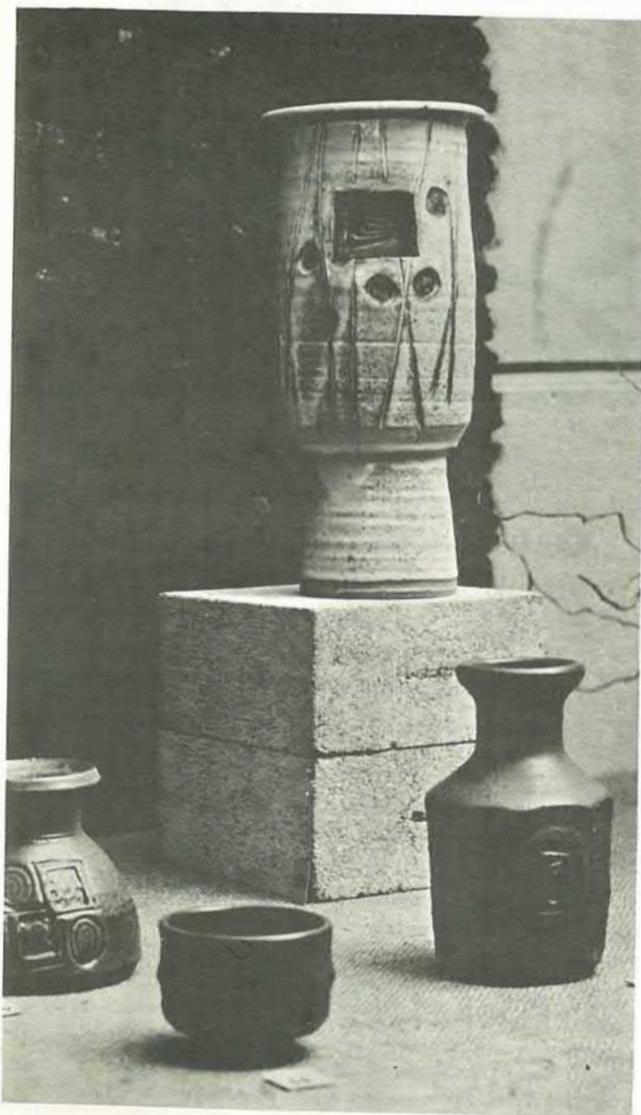
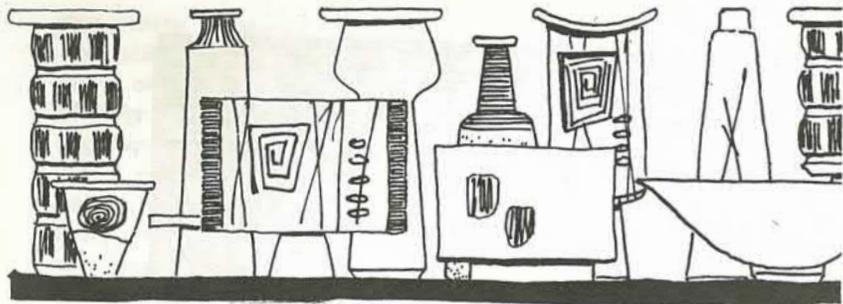
We offer a complete range of standard kilns from one cubic foot upwards. Additionally we manufacture a high temperature kiln suitable for burning stoneware at 1300°C.

We solicit your enquiries.  
Literature available describing kilns with prices.  
Established 1946.

Model firing to 1300°C max.

## W D McGREGOR LTD

48a Stoddard Road, Mt. Roskill, Auckland. Phone 899-619  
Manufacturers of Electric Pottery Kilns, Furnaces and Allied Equipment.



A husband & wife team

# MARTIN

working strictly as individuals

# & NANCY

but sharing facilities & ideas,

# BECK

overlapping & diverging  
in techniques & tastes.

Represented in private & museum  
collections in New Zealand & also  
in travelling overseas exhibitions.

Both interested more in exploring  
form, textures & decorative quality  
in clay & glaze than in making pots  
for use strictly in a domestic sense.

Amateurs in the true meaning,  
potting for their own pleasure.

an exhibition of pottery  
from 16 - 27 august 1965  
new vision gallery

# barry

an exhibition of pottery  
11 to 23 october 1965

new vision gallery  
his majesty's arcade  
queen street auckland



born in taranaki 1935, lived mostly in  
auckland, escaping regularly to the country.  
abortive attempts at professional occupa-  
tions, including teaching.

took up full-time pottery at coromandel in  
1961. is mainly self taught, with the aid of  
a few friends. experience at brickworks and  
kiln work before making pottery.

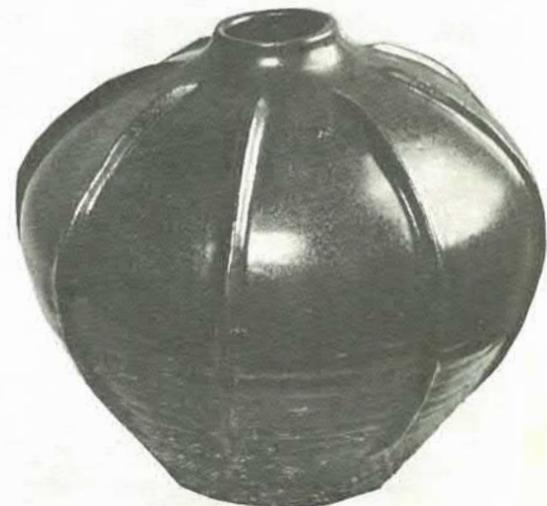
as a child obsessed with fires and furnaces,  
earth, clay, native plants, rocks and  
old, heavy machinery, particularly steam  
engines and railways.

all are being combined at the property at  
coromandel. several kilns are used, with  
emphasis lately on coal firing.

## Pottery . . . Doreen Blumhardt

Doreen Blumhardt, head of the Art  
Department of the Wellington  
Teachers' Training College, went to  
Japan in 1962 on a Japanese  
Government grant to study pottery  
and stayed for five months, work-  
ing with a number of different  
potters and visiting many others.  
Interest in education has led her  
to experimenting in the designing  
and making of domestic ware, as  
she believes that by handling and  
using pottery appreciation begins  
and grows.

Doreen Blumhardt, with Brian Carmody,  
painter, at the Centre Gallery, November  
15-26, 1965.





Fired Clay — Helen Mason  
New Vision Gallery, Auckland, July 19–30,  
1965  
Aladdin's Gallery, King's Cross, Sydney,  
August 18–31, 1965

Helen Mason, Wellington potter and editor of the New Zealand Potter magazine, is an experimentalist.

It was in 1953 that she built her first kiln, using as a basis Elizabeth Matheson's old oil-burner.

Mostly self-taught, she owes a lot to the knowledge freely given by her friends.

In 1960, she visited Japan, working briefly at Seta City with Shunto Kato, a potter of the modern school.

In 1962, she returned to Japan for a short visit and then had a quick look at Europe.

Last year Barry Brickell and friends built her a large two-chambered oil-fired kiln of 45 cubic feet designed by Roy Cowan.

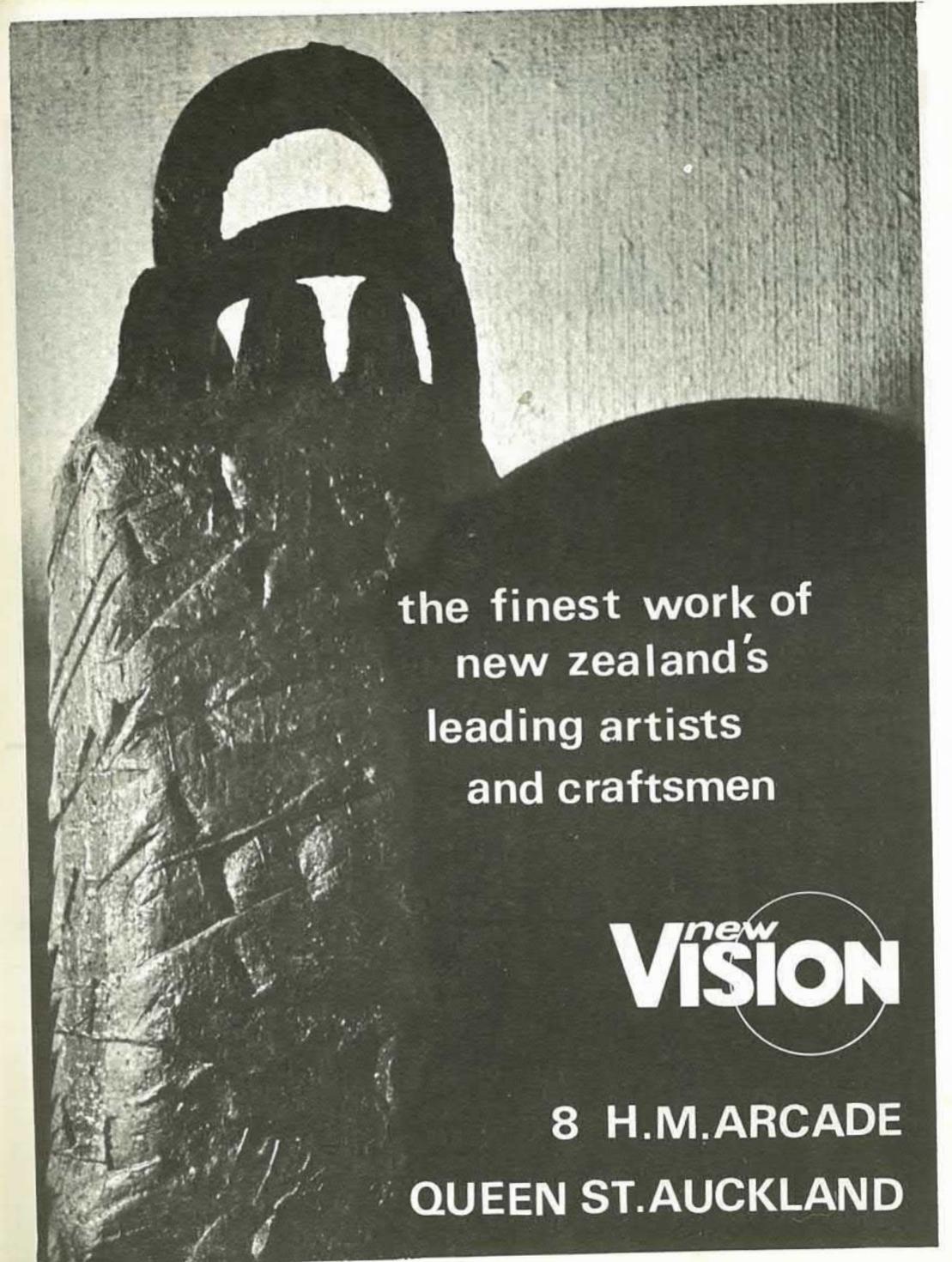
Working in stoneware fired to 1250°C–1300°C, she loves throwing clay, glaze and fire together to find out what will happen.

The survivors are the exhibition.



DAVID BROKENSHIRE

A family of pots



the finest work of  
new zealand's  
leading artists  
and craftsmen

*new*  
**VISION**

8 H.M.ARCADE  
QUEEN ST.AUCKLAND



Group of pots by Wilfred Wright.

Janet Wright.



**Stocktons Country Gallery Christmas Exhibition, Reikorangi Hall, December 4-12, 1965. Pottery, Wilf and Janet Wright; Painting, Prints and Sculpture by Malcolm Warr and Maree Lawrence; Woven Panels with Native Grasses, Barbara Cape.**

**WILF AND JANET WRIGHT**

The Firing  
for Les Blakebrough and John Chappell.

Bitter blue fingers  
Winter nineteen sixty-three A.D.  
showa thirty-eight

Over a low pine-covered splay of hills in Shiga  
West-south-west of the outlet of Lake Biwa  
Domura village set on sandy fans of the sweep  
and turn of a river

Draining the rotten-granite hills up Shigaraki  
On a nineteen-fifty-seven Honda cycle model C  
Rode with some Yamanashi wine "St Neige"  
Into the farmyard and the bellowing killn.

Les and John  
In ragged shirts and pants, dried slip  
Stuck to with pineneedle, pitch,  
dust, hair, woodchips;

Sending the final slivers of yellowy pine  
Through peephole white blast glow  
No saggars tilting yet and segers bending  
neatly in a row —  
Even their beards caked up with mud and soot  
Firing for fourteen hours. How does she go.  
Porcelain and stoneware: cheese dish, twenty cups.  
Tokuri, vases, black chawan  
Crosslegged rest on the dirt eye cocked to smoke —  
The hands you layed on clay  
Kickwheeled, curling  
creamed to the lip of nothing,  
and coaxed to a white dancing heat that day  
Will linger centuries in these towns and loams  
And speak to men or beasts  
When Japanese and English  
Are dead tongues.

Gary Snyder 30.1.64.

**JOHN CHAPPELL—POTTER 1931-1964**

Stone erected in John's memory by his friends at  
Domura, near Kyoto, Japan.





The kiln operating.

## A SMALL KILN

Peter Stichbury

This kiln, as shown in the photographs, was built at Ardmore, so that students could learn to pack and fire a small kiln, a kiln which did not cost too much, was easily built and easily managed. These aims have been achieved and two other kilns of the same dimensions have been built nearby, one potter producing and selling ware of good quality from one of them.

The photo also shows the firing method — an old Hoover vacuum cleaner attached to a pressure box with sliding lid which gives pressure variation or varied air flow. From the box two 1½" plastic pipes with 1½"

copper nozzles with flattened ends are fitted. The air is directed at the oil which flows from an ¼" pipe with needle valve control. In this fashion the kiln is fired to Cone 10 in nine hours.

Photograph 2. shows the kiln open after a firing with both cones 10 down and cone 11 standing on the top shelf. All materials except arch bricks and fireboxes were second hand.

### Internal dimensions

Length 40½" (4½ bricks lengthwise).

Depth 18" (2 bricks).

Height 30" (to centre of arch).

Total capacity 11 cubic feet approx.

Stacking capacity 9½ cu. ft. approx.

Shelf size 15" x 12", leaving 1½" all round for flame movement.

The shelves are of Silicon Carbide.

A completed firing.



The kiln shown here has a single chamber, but a second chamber of approximately equal size can be added if required.

The door or wicket, 2½ bricks wide, is left open after two layers are down. The end walls are completed when seven layers are down, and the arch is then added. The kiln is braced in the usual way, visible in the photographs. If full insulation is added from the start, the cross tie rods should be 9" longer than the size given.

The arch is best laid without any mortar, the tie rods loose, and tightened when the arch and door arch are completed. It is convenient to fill the door with bricks to hold the kiln firm while setting the arches. The arch is best set upon a wooden former, two planks cut to the shape of the arch and set about 6" apart.

The back wall is built up with firebrick to the top of the arch. Common brick is then used all round for three more courses to form a 'tank' on top to contain insulation, preferably Vermiculite.

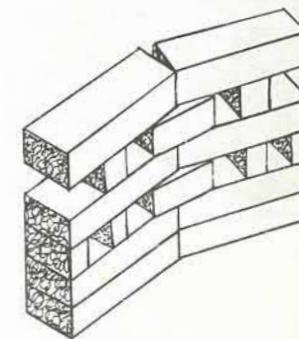
The flue is built out to allow a chimney or stack 6" square inside to be built directly up the back wall if only one chamber is built. Build the chimney as high as possible or convenient then complete with a 6" diameter pipe to a height of 12 feet. The Ardmore kiln has an 8 foot pipe welded to a 12" square cut out plate to sit firmly on the brick section. A damper should be fitted about two feet up in the chimney.

### Bagwalls

These are very open to allow a good flow of heat from the fireboxes at three levels — this ensures a very even firing. Soaps are used in the construction, as shown.

A tremendous heat is generated in the fireboxes, so the material used in the bagwalls should be fired as high as possible first. The ones at Ardmore toppled as each brick shrank about ¼" on the hot face. This toppling can be avoided by cutting a slight angle at one end of all the full soaps and setting them as in the sketch. It is better to have the bagwall loosely stacked rather than to fit firmly into the kiln walls.

Insulation should really be built as part of the kiln, but it is possible to add a layer of common brick to the back wall, and also to the front if the wicket is closed with only one layer of brick. This is built up for each firing.



Half soap centre, two 2" pieces.

Half soap centre, four 1½" pieces.

### Construction

The base is concrete on hard earth. On this three layers of common bricks are laid. The flue is incorporated in the second and third layers, being a 6" by 6" tunnel from the centre to the back wall. All bricks, except those around the flue where fireclay mortar is used, can be set dry and levelled or cracks filled with sand. The fourth layer is firebrick set with fireclay and forms the floor of the kiln. Photo 1 shows the completed base and indicates the dimensions and arrangement of bricks. The 6" flue is the exact centre of the kiln floor.



The floor, showing flue.

#### Quantities

Approximately 350 firebricks, 350 common bricks, 24 soaps.

The arch is made from:

- 26 side arch bricks 2 $\frac{3}{4}$ " inside face.
- 6 side arch bricks 2" inside face.
- 2 side arch bricks 2" inside face.
- 4 skewbacks to site arch.

#### Bracing

- 2 pieces angle steel 3' 3" long.
- 4 pieces angle steel 3' 6" long.
- 4 pieces  $\frac{1}{4}$ " rod 3' 3" long.
- 4 pieces  $\frac{1}{4}$ " rod 6' 3" long.

A recommended size for the angle steel is 2" x 2" x 3/16". The rod is threaded about 3" from each end. Lugs are welded to the top and bottom of the angle steel to hold the tension rods about one inch away from the brick faces.

The fireboxes are two Auckland Gas Co. DX "Sight Boxes" with plugs, costing 15/- each.

#### Walls

The fireboxes are set first, 40 $\frac{1}{2}$ " apart, centred on the flue. The walls are built incorporating these, double thickness at the ends and single thickness at the sides. Insulation can be added at this stage using common bricks, but with the Ardmore kiln it was applied last, as the commons differ in size from the firebricks. All bricks are buttered with thin fireclay—the bricks can be dampened so that the mortar doesn't dry out too quickly. If "Sight Boxes" are not available, 3" square holes can be left at centre, 3" above floor level, for firemouths.

The firemouths and bases of bagwalls.



# NONPORITE

**CARBOLOX KILN FURNITURE**  
**SHELVES and SUPPORTS**  
**UP TO 1800°C**

**EXFOLIATED VERMICULITE**  
**IN 4 CUFT PAPER BAGS**

**REFRACTILE FIRE CEMENT**  
**UP TO 1400°C**  
**IN  $\frac{1}{2}$  GLN. 1 GLN. 4 GLN. Containers**

**J.H.M CARPENTER LTD.**  
**Box 9085 AUCKLAND PHONE 51089**

## THE NEW ZEALAND POTTER

This magazine, a non-profit-making venture, is published by the Editorial Committee, Wellington, New Zealand. It is published each August and February, with the subscription year ending 31st March.

EDITOR: Helen Mason

EDITORIAL ASSISTANTS: Lee Thomson  
Doreen Blumhardt

PRODUCTION: Juliet Peter  
Roy Cowan

TECHNICAL EDITOR: Roy Cowan

EARTHENWARE ADVISER: O. C. Stephens

ADVERTISING: John Nicholson

SUBSCRIPTIONS AND CORRESPONDENCE to: The Editor,  
New Zealand Potter,  
Box 44, CARTERTON,  
WAIRARAPA  
John Nicholson,  
P.O. Box 617,  
WELLINGTON

ANNUAL SUBSCRIPTION: New Zealand, ten shillings.  
Australia, two dollars (A).  
United Kingdom, ten shillings stg.  
U.S.A., two dollars (U.S.A.)  
Subscriptions may be sent in your own currency.

The New Zealand Society of Potters is a separate institutiin and correspondence should be directed to:

The Secretary, New Zealand Society of Potters, Inc.,  
P.O. Box 3294, WELLINGTON, NEW ZEALAND.

