Contemporary Porcelain

Materials, techniques and expressions

PETER LANE

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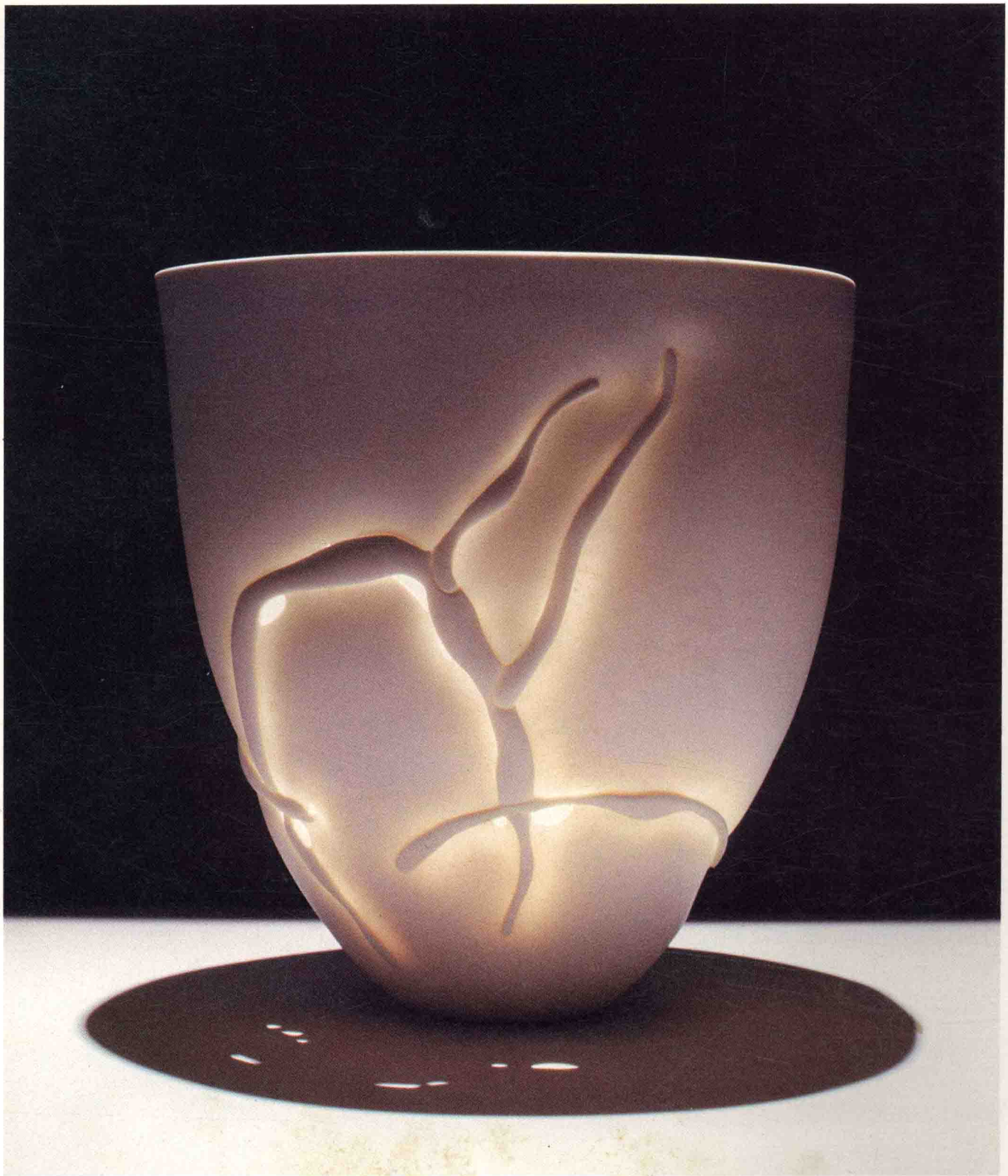

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MATERIALS, TECHNIQUES AND EXPRESSIONS

PETER LANE

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Dedication

To the memory of my mother, Freda Margaret Lane (1906–1994), whose courage, fortitude and caring good humour was a shining example to everyone during her final, painful illness.

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Porcelain Vessel, wheel-thrown carved and pierced, by Horst Göbbels. *Photograph by Wolf Böwig.*

Frontispiece
Vessel form in bone china, slipcast, carved and altered, 20 cm high, by Angela Verdon, 1992.

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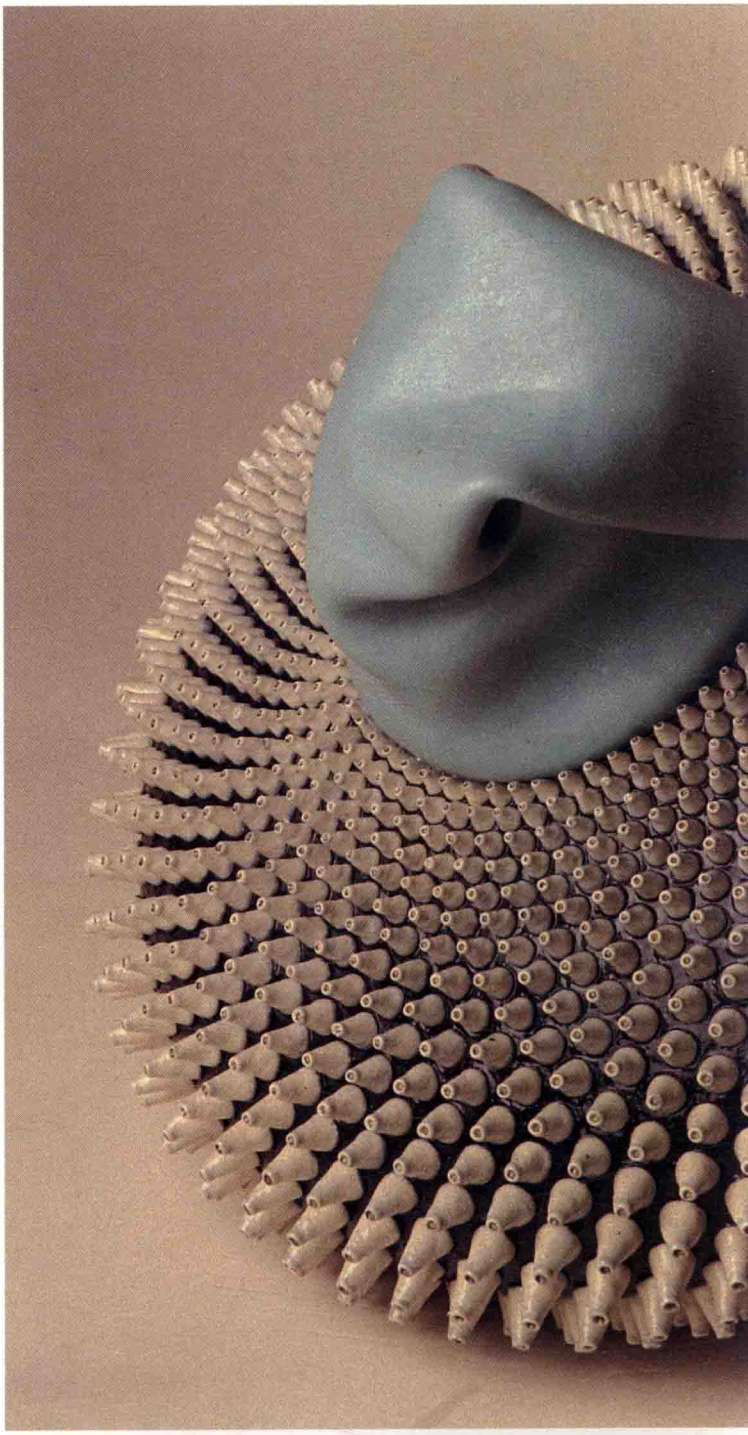
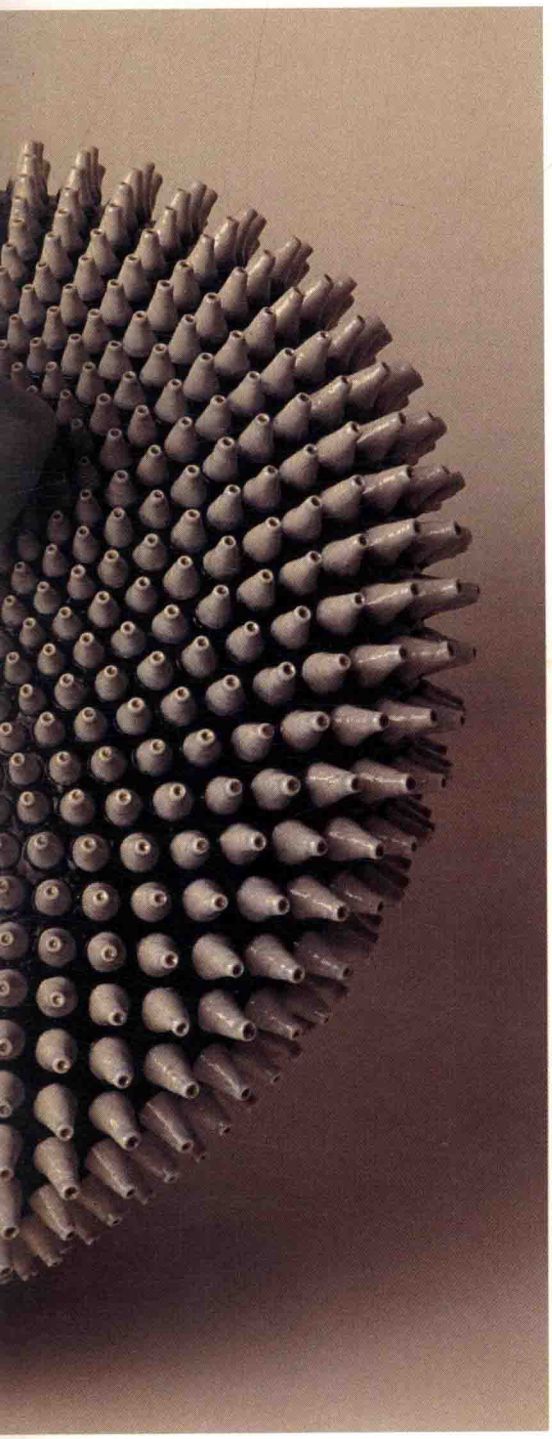


'Sphere Protrusion', porcelain, 45 cm high by Peter Masters, 1991. The strong rhythmic raised pattern is built up from individually applied elements; sodium vapour glaze fired to 1280°C in a natural gas kiln.



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Acknowledgements

Any author of a book of this kind must rely heavily upon the goodwill and cooperation of many people. I am deeply indebted to all the porcelain makers who have so generously given of their time and expertise in helping me to gather material for this book. I am especially grateful for the loan of photographs willingly provided by so many potters around the world and to the photographers for allowing their reproduction as illustrations for the text. In particular, I would like to thank Wolf Böwig, of the Keramik Galerie Böwig in Hannover for taking great care in photographing the work of several important artists for me. Hein Severijns (Holland), Jan Schachter (California), Curtis Benzle (Ohio), Bill Hunt (Editor of *Ceramics Monthly*), Janet Mansfield (Editor of *Ceramics: Art and Perception*), Sandra Black (Western Australia), Erik Pløen (Norway), and others were all extremely helpful in providing me with addresses of potters working in porcelain. My sincere thanks are due also to Chris Hogg and Harry Fraser for their helpful technical notes on the search for porcelain and bone china bodies with good working properties. Many potters, gallery owners and collectors at home and abroad have all given me the encouragement needed to produce a completely new book on contemporary studio porcelain. My thanks are also due to my editor, Linda Lambert, who persuaded me that it was time to address the subject again. To my wife, Jean, for her patience and tolerance while I spent long hours communicating only with my word processor, and who regularly interrupted her own creative work to keep me supplied with good food and endless cups of coffee, a very special thank you.

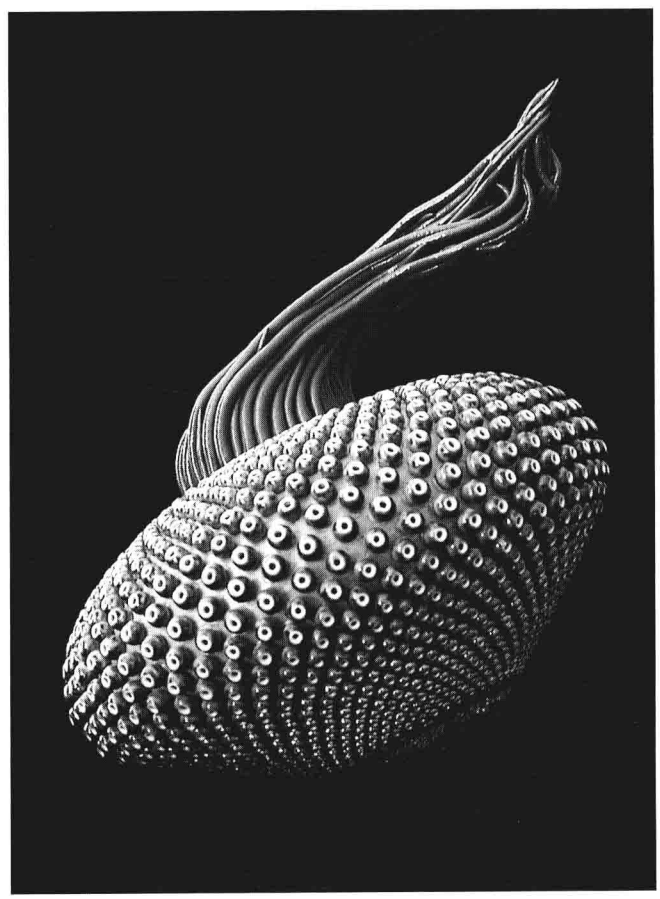
Peter Lane, 1994
New Alresford, Hampshire

INTRODUCTION

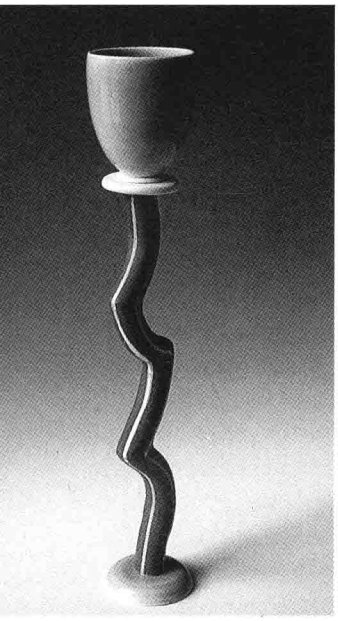
There have been many exciting developments in the field of contemporary ceramics since my first book on the subject was published in 1980 under the title of *Studio Porcelain*. This was an attempt to examine an area of the discipline which, despite its long history, had been largely neglected by studio potters. This new book endeavours to address the subject afresh and to investigate what changes in attitude or in approaches to design and making, if any, may have occurred during the intervening years. In the course of my research, I have consulted a large number of ceramicists who regularly work with porcelain and tried to discover something of their personal philosophy towards their art and its place in modern society. Particular emphasis is given in the book to the enormous diversity and rapid development which has taken place over the latter part of the 20th century in international studio porcelain and considers some of the aesthetic concerns, technical achievements and working methods of these ceramicists working with porcelain and its close relative, bone china.

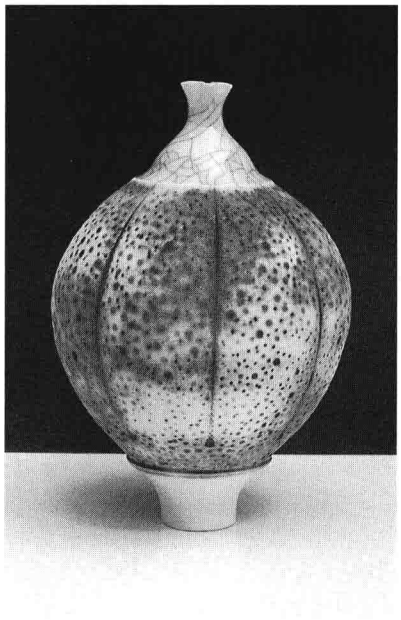
Porcelain offers a far wider range of options and applications than those most popularly perceived for it. The basic qualities usually associated with or required of high-fired porcelain such as delicacy, translucency, fineness, whiteness, density and purity remain available, of course, but many potters have chosen to break with traditional expectations of the medium. Their primary concern is more likely to be the exploration and realisation of three-dimensional form, using porcelain as the most appropriate plastic material, and incorporating various techniques for their purposes. Often, those singular physical properties will be still evident in a porcelain object but the emphasis on any or all of these will depend upon the manipulative processes employed at various stages from wet to dry; the thickness of sections; the application of colour in oxides, stains, slips or glazes; and on the final firing.

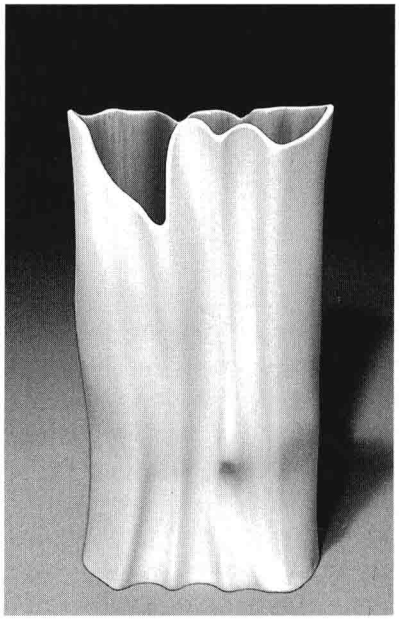
It has generally been accepted that porcelain, as a material, can be somewhat daunting both to use and control until one becomes familiar with certain unique aspects of its character. In *Studio Porcelain* I tried to clear away much of the fog and mystique surrounding the successful making of porcelain and to offer advice and suggestions for its imaginative use. Today, there appear to be virtually no boundaries which cannot be stretched and few rules that can remain inviolate in this area of human invention as can be seen by the immense variety of forms and surface treatments in the work of porcelain potters from around the world which have been assembled together in this book. Originality, flair and skill combine in the best work to present us with numerous stimulating images: vessels, tiles, wall panels, figurative sculptures, and abstract objects all

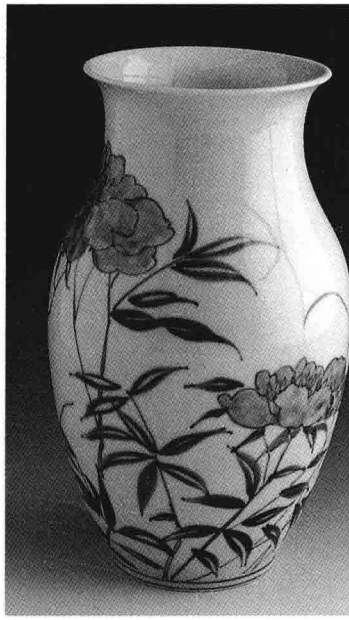


'Sphere Protrusion', porcelain, 45 cm high by Peter Masters, 1991. The strong rhythmic raised pattern is built up from individually applied elements; sodium vapour glaze fired to 1280°C in a natural gas kiln.









Goblet form on tall, angular stem made from wheel-thrown and handbuilt elements and fired to 1280°C in a gas kiln with a reducing atmosphere, 38.5 cm high, by Maria Bofill, 1993.

Second left Porcelain pot, 11 cm high, by Geoffrey Swindell, 1989. Wheel-thrown, with textured surface made at the leatherhard stage by imprinting marks with a wire brush. This texture is enhanced later by a feldspathic glaze overloaded with vanadium. Fired to 1250°C in an oxidising atmosphere.

Second right Slipcast porcelain vessel form with carved rim by David Fink (USA), 1993. Colour glazed inside but with the exterior polished. The inspiration for this piece came from eroded rock formations.

Far right Porcelain Vase with 'gosu' brush decoration in blue, 28 cm × 15 cm, by Alistair Whyte, 1993.
Photograph by Avon Colour Studio.

created in an unusually 'unforgiving' medium. It must be acknowledged that a number of potters who became well-known after several successful years working with porcelain have turned to earthenware clays because they found that the lower firing temperatures presented them with greater control, but others have preferred to continue using this fine, white body while gaining fresh inspiration through pushing the material to the very limits of their ability.

Not all the pieces illustrated will be immediately recognisable as porcelain because they seem not to fit into any of the familiarly held perceptions. One might question, therefore, whether porcelain was the proper medium to use for them, but for one reason or another, it was decided that a different clay body would fail to satisfy all the practical and aesthetic requirements which the artist deemed essential for his/her personal expression. In each case, porcelain acts as the common denominator linking all the works chosen to illustrate this book. Techniques and processes described are, in many instances, similar to those identified with other branches of ceramics adapted, where necessary, to suit individual needs.

The work of the contemporary ceramicist has grown out of a long and glorious history. It seems that countless generations of potters have already explored every practical, technical, social, cultural and aesthetic aspect from the preparation and composition of clay bodies and glazes to the construction and firing of many different types of kilns in producing the vast wealth of ceramics which we all inherit. In truth, it is often stated that since so much has gone before, there is little scope for truly fresh invention. Nevertheless, ceramics continues to offer us the appropriate, and universally understood, visual and tactile means to express individual thoughts, ideas and feelings. In this respect one can make an analogy with words or with musical notes in that they, also, are infinitely reworked to communicate anew.

Few clays can be used 'as dug' in the making of refined ceramics. Therefore we refer to the clay mixtures as bodies. Varying amounts of clays and certain other materials such as quartz, flint, feldspar, nepheline syenite, Cornish stone, whiting, silica sand and talc are combined together to make workable plastic bodies to suit a whole range of purposes and firing temperatures. Porcelain bodies, however, are usually composed of just three main ingredients: kaolin (China clay), feldspar and quartz with smaller amounts of ball clay or bentonite added to ensure plasticity. Unfortunately, ball clays can impair the whiteness and affect translucency whereas bentonite is less likely to do so. However,

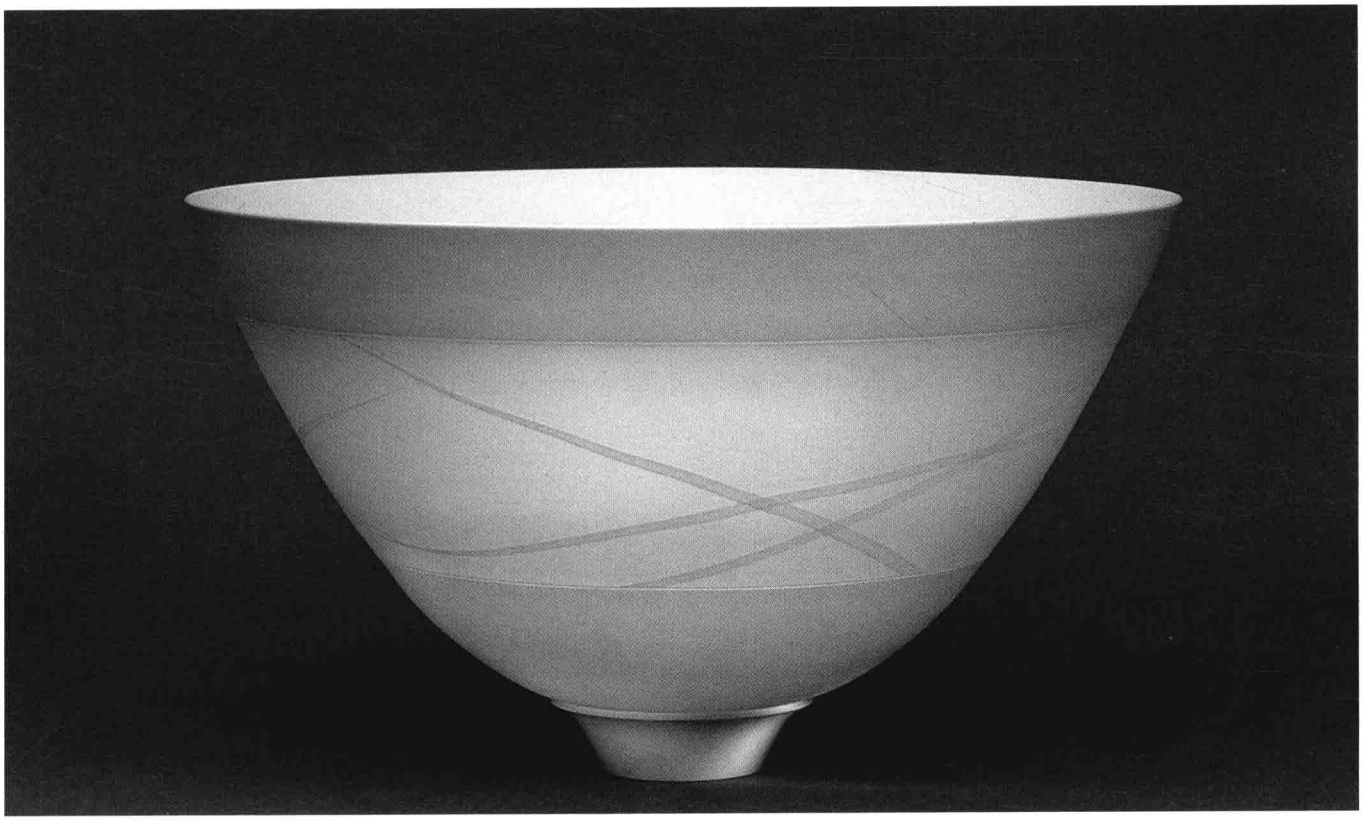
bentonite (a highly plastic, colloidal substance with a very fine grain size), which is widely used for preparing porcelain with good throwing properties, can increase problems of shrinking and cracking if more than six per cent exists in the composition.

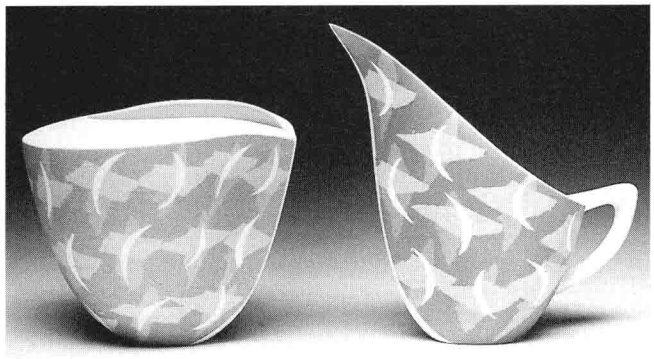
Porcelain is simply a composition of fine, relatively similar sized particles of kaolin, silica and feldspar which achieves a more complete fusion than stoneware or earthenware clays that tend to be made up with additional ingredients including sands or grog. It is the extra silica content of porcelain which contributes its glassy translucent quality but, at the same time, makes it more susceptible to stress due to its high rate of expansion and contraction. All potters are aware of the importance of slow cooling following a kiln firing but porcelain is especially vulnerable to dunting, if cooled too quickly, at those points where the silica inversion take place at 570°C and 226°C respectively.

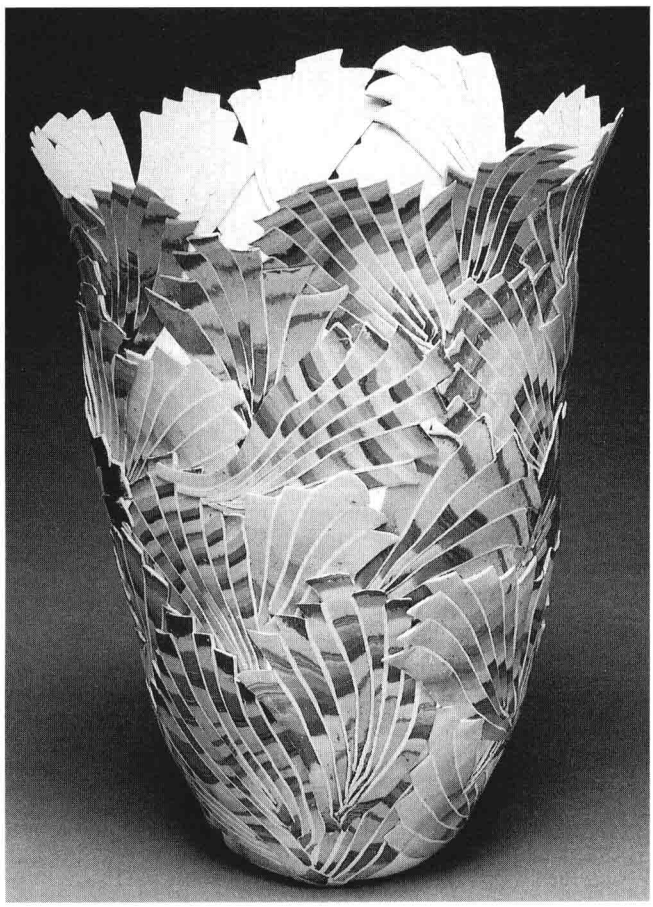
Despite differences in composition, most porcelain bodies possess the potential to be translucent but the degree to which that state is achieved depends on the thickness, or rather thinness, of the clay. Nevertheless, if translucency alone is held to be the key to defining 'true' porcelain, it may be argued that many of the bodies currently available are no more than white porcellanous stonewares. Therefore, the definition of porcelain is open to question. However, this is not an issue that concerns us here. My researches have discovered an extremely wide range of applications for white, porcellanous bodies having a very high content of the essential kaolin, feldspar and silica supplying the main qualities expected of porcelain. Some body compositions are considerably more translucent than others but that particular property may be of little interest to the ceramicist for whom form, surface, colour or texture is sufficient for their expression and communication. Porcelain bodies generally become vitrified when fired to temperatures well above 1200°C and the higher this is, the greater the proportion of glass that will be formed in the body. This is the main factor assisting the passage of light through it, although complete vitrification is not necessary for this to occur.

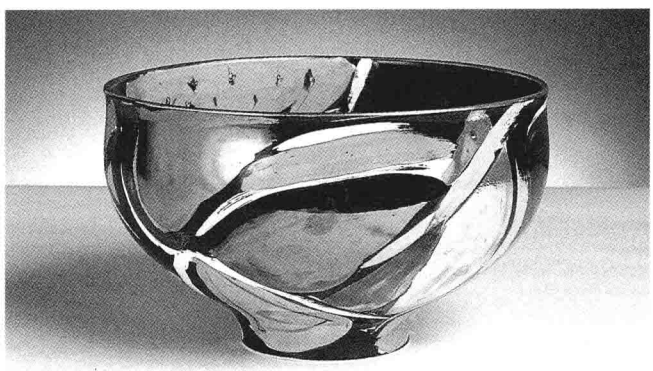
There are many potters for whom those delicate and varying degrees of translucency, which can only be revealed after the final firing, will be the supreme attraction and ultimate goal. The interplay of light onto and through a finely-made piece provides one of the most satisfying experiences in both seeing and touching. Yet this aspect may not appeal to everyone. Instead, some ceramicists

Porcelain bowl with extremely thin walls, thrown, turned, and decorated with brushed and trailed slip over latex resist, 44 cm diameter, by Arnold Annen, 1992.
Photograph by Reto Bernhardt.









may be attracted to porcelain more for its smooth, dense texture which allows it to accept the finest incising, piercing and carving at various stages from wet to dry. Others will prefer to exploit whiteness for its own sake or as a 'canvas' for colour. For there is no doubt that much of the appeal of porcelain (and even more so with bone china) as a material in which to produce forms of diverse kinds owes a good deal to that particular quality of clean brightness uncontaminated by iron or other impurities. The full, unblemished colour spectrum is thus made available for unhampered use.

Often, porcelain has been chosen to form the whole or a significant proportion of the body composition for making quite low-fired ceramic objects. In such instances, the potters are not concerned with meeting the normal requirements for domestic use (e.g. to hold liquids) so they do not need the extra strength and durability afforded by firing the body to maturity. All porcelain bodies must be fired to temperatures in excess of 1200°C if they are to become impervious to water. But, even, when fired as low as 1000°C, porcelain still offers an extra-fine, smooth, white body, superior to most others, that provides such excellent opportunities for surface treatments that they compensate for any physical weakness. In some cases, potters have chosen to use porcelain in the form of slips to coat and conceal any coarser clays they have used to create the piece. Porcelain-based slip gives them a good, white ground for colour while a thicker application can be compacted and burnished to a silky-smooth sheen.

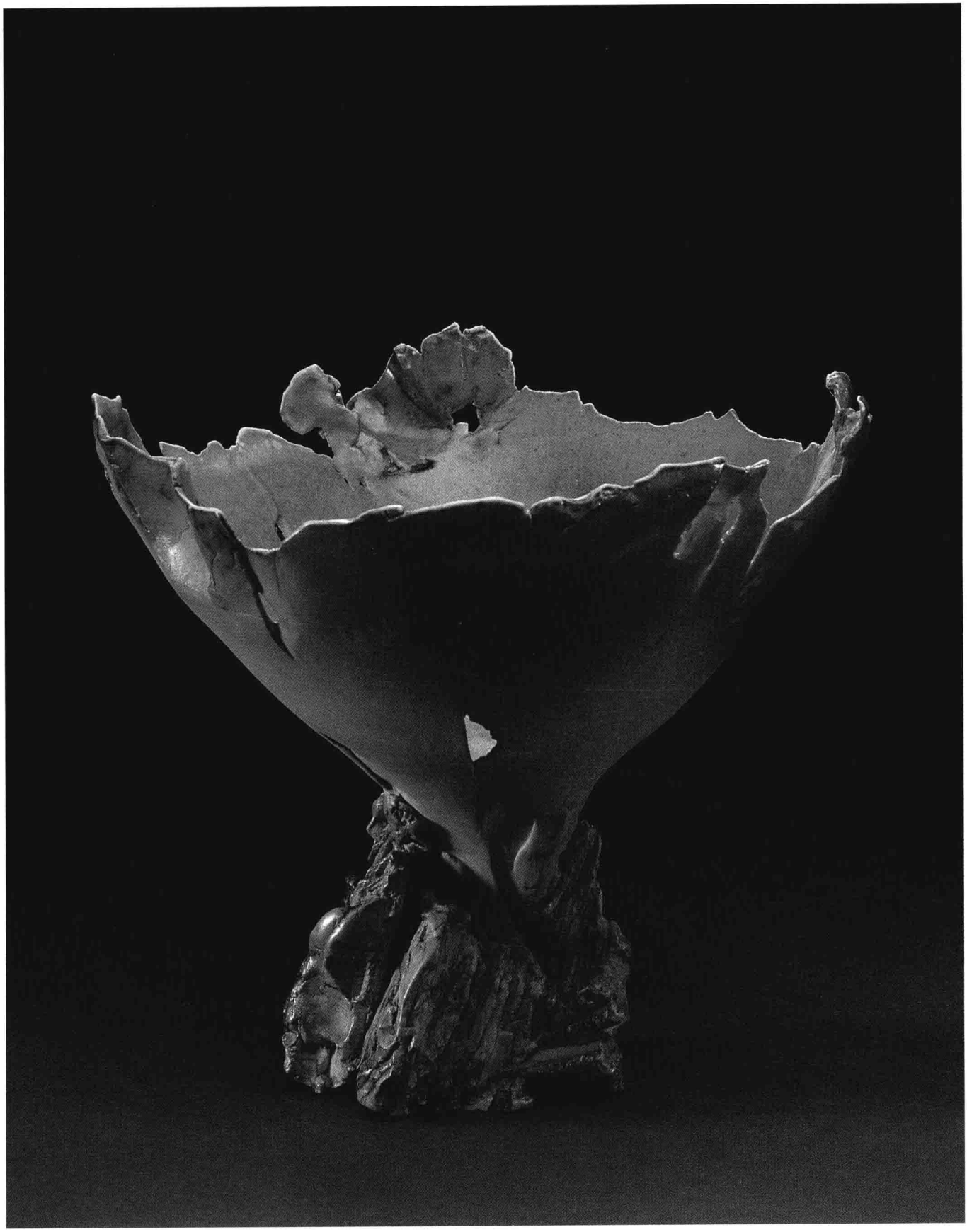
Potters, perhaps, are more intimately occupied with and, to a certain extent conditioned by, the materials, techniques and processes of their discipline than any other artist-craftsmen. They have to understand sufficient of the practical physics and chemistry involved if they are to avoid frequent frustrations. Even the most experienced suffer disappointments from time to time when results are not quite what had been intended. The search for personal ideals is continuous and, in most cases, their appetite for

Top Jug and bowl forms slipcast in bone china and decorated with airbrushed ceramic stains by Sasha Wardell, 1992.

Middle Vase, 'Autumn', 35 cm high, by Judith de Vries, 1992. Constructed from separately made 'leaves' of laminated, coloured porcelain built up piece by piece. Fired to 1200°C in an electric kiln. *Photograph by Claude Crommelin.*

Bottom 'Desert Night', porcelain bowl, 29 cm diameter × 18 cm high, by Pippin Drysdale, 1993. Wheel-thrown, with painted coloured stains on top of a white (tin/zirconium) glaze, fired to 1200°C in an electric kiln.

Opposite 'Chalice of Promise', handbuilt porcelain, wood-fired in an anagama type kiln, 26.5 cm high, by Catharine Hiersoux, 1990.



technical understanding is voracious. This interest has spawned an enormous number of books which have been published on every aspect of ceramics during the years following the Second Word War but the demand for yet more information about technicalities remains undiminished.

Despite the inveterate curiosity of most potters, I have discovered a surprising number who admitted that they have little or no interest in ceramic chemistry for its own sake. They obtain all their commercially-prepared materials from reliable sources knowing how they will perform in use so that they can concentrate all their creative energies to procure fairly predictable results. Above all it is the expression that matters. During more than 30 years of making and teaching ceramics, my own interest in and respect for the diverse ways in which individual artists around the world resolve technical as well as aesthetic problems of design remains strong. I firmly believe that as experience grows so does the realisation that there is so much more than anyone can possibly comprehend in a single lifetime. Therefore, we have to be selective, concentrating upon particular aspects that appeal to us and, in that continuous enquiry, we are limited only by the time we can devote to it and by our own capacity to understand. This fact, for me, contributes to the continuing excitement of ceramics and of porcelain in particular. The main aim of this book, therefore, is to examine and explain some of the personal thoughts, feelings, approaches and techniques currently employed by individual ceramicists in the specialised field of porcelain. However, it is important to stress that those techniques can never be a satisfying end in themselves. They are only the *means* employed to achieve that end. Any discussion about techniques, therefore, must be directly related to the more significant aesthetic achievements of the work illustrated.

It is highly unlikely that the reader will find that *all* the works depicted in this book appeal to his or her personal taste. Nor has it been possible to include reference to every notable potter working in porcelain at the time of writing. Nevertheless, I believe that, as an author, it is essential to exercise a broadly catholic choice which gives a reasonably wide representation of studio porcelain in the late 20th century. I have consulted a great number of ceramicists working in porcelain and bone china around the world all of whom have been most generous in providing me with information about their thoughts, feelings, aims and processes. Direct quotations from them are frequently used to amplify the text. In this way, I have been able to include

'Huntly', porcelain plate, 29.5 cm diameter, by Peter Minko (Australia), 1993. Wheel-thrown and burnished at the leatherhard stage before bisque firing to 920°C. Hand painted with finely ground pigments (mainly metallic oxides) and fired twice to 1280°–1300°C in oxidation to fuse the colours to the unglazed surface. Gold lustre is then applied in a further firing to 760°C.

Porcelain Bowl, 38 cm × 7 cm, by Russell Coates, 1993. Wheel-thrown, with painted underglaze blue decoration under a clear/white glaze fired to 1270°C and then enamelled with the design of a cross in a red circle surrounded by paired cormorants, geometric border and dolphins.

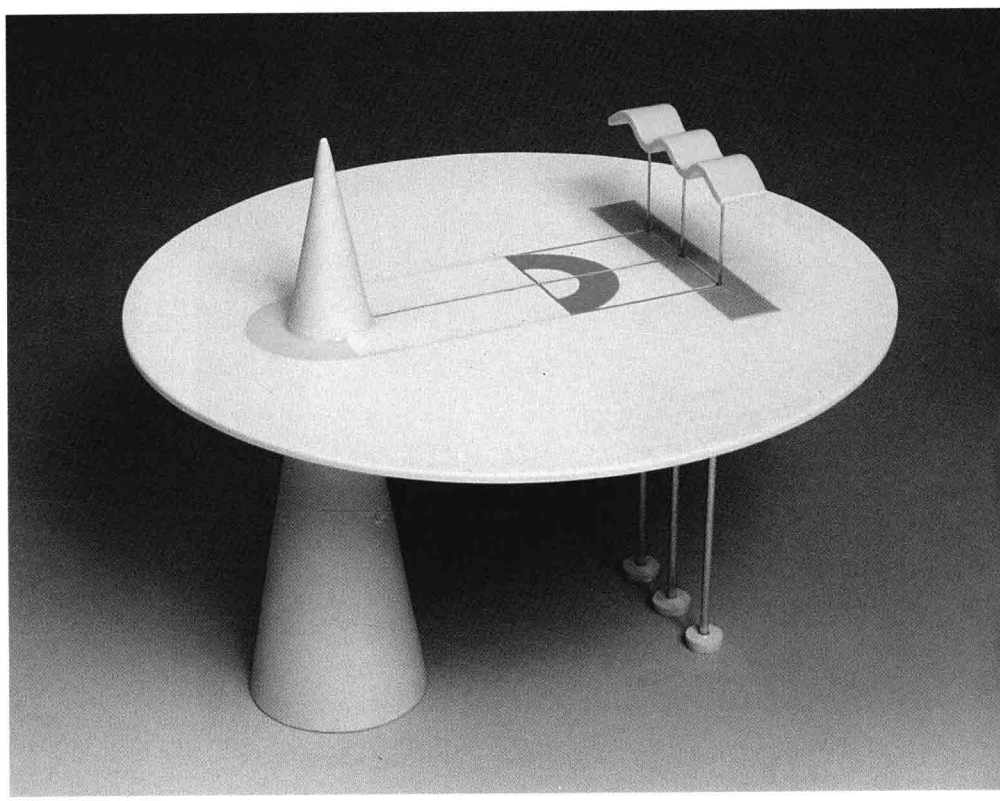
details of the working methods of many potters from different social and cultural backgrounds. These are illustrated and discussed throughout the book. The materials potters use in the execution of their art are common to all, but their stimuli, influences, approaches and objectives cover a very wide spectrum.

My own personal preference is for making 'vessel' forms, especially bowls, since they are open to infinite variation both subtle and extreme and whether or not concerned with function. Although countless millions of container forms have been produced in ceramics to serve a multitude of purposes from the humble to the sublime, there will never be an end to their aesthetic possibilities. The best of these objects transcend utilitarian needs to become the purest form of three-dimensional art.

Throughout history, ceramics presents us with a magnificent kaleidoscope of human expression, functional, figurative and abstract. But too many art critics tend to dismiss sculptural work executed in clay as being of little relevance to the field of 'fine' art and arguments concerning its status remain unresolved. Uncompromising attitudes raise questions as to whether criticism of any ceramic work can be truly objective other than in matters of fact, that can be judged in those measurable, quantifiable aspects such as pure craftsmanship? Indeed, to what extent can critical criteria remain constant in the face of continuing development? the unrelenting speed of change affects us all. What one generation adores the next often *abhors* as in other areas of visual expression. It would seem virtually impossible to identify a definitive kind of 'public' taste that might indicate what should be expected of ceramic art today. We do not *need* individually produced, handmade ceramics. They are not essential for everyday, practical purposes. Of course, there will always be those who prefer not to use industrially-made ceramics, or glass, or plastics, etc. in a domestic situation and, doubtless, their needs will continue to be supplied, but the modern potter is not *bound* to cater for them. Therefore, the only certain restrictions, apart from economics or individual sensibilities, are those imposed by the potters's own ability to control the material processes of his or her art. One can choose to build upon tradition or fly in the face of it. Above all else, contemporary ceramics should be accepted as a prime vehicle for tactile, visual expression.

Many questions came to mind during my enquiry into contemporary studio porcelain, some of which relate to ceramics in general. Although some answers may be found in the following pages, most will remain open to discussion

Bowl in multi-coloured (yellow, blue, black and brown), laminated porcelain, fired to 1320°C in a reducing atmosphere, 16 cm diameter, by Rainer Doss, 1993.

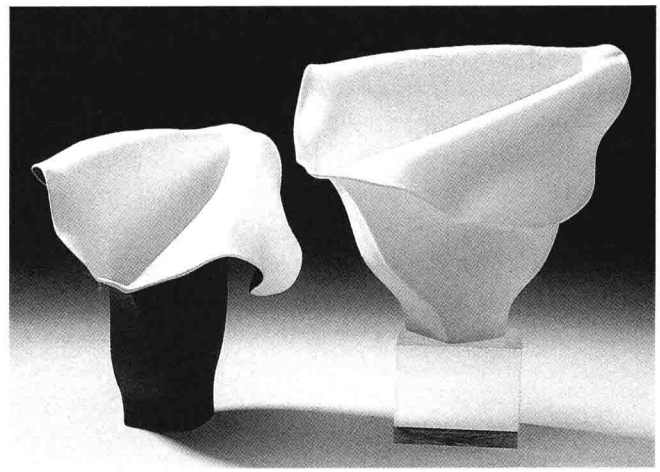


Porcelain Sculpture, untitled, with aluminium tubes and steel wire, 19 cm × 19 cm × 15 cm, by Wil Broekema, 1991. *Photograph by Dick Huizinga.*

and reassessment. It is extremely difficult to attempt a definitive analysis of a discipline in a state of constant flux, but by questioning, examining and observing developments around the world one can arrive at some small understanding and appreciation of the wonderful diversity to be found in modern ceramics. We can look at a piece and ask ourselves in what way it relates to traditional ceramics or how it fits within the context of the late 20th century? Whether it has the power to evoke a sympathetic or antipathetic response in us? Are there references to, or influences from, any other branches of the visual arts? Does it seem to reflect a moment in time like the present or does it echo past moods, expressions or cultures? How 'original' is it and does it matter if it is not? Is it so esoteric that it only belongs in an exclusive gallery setting?

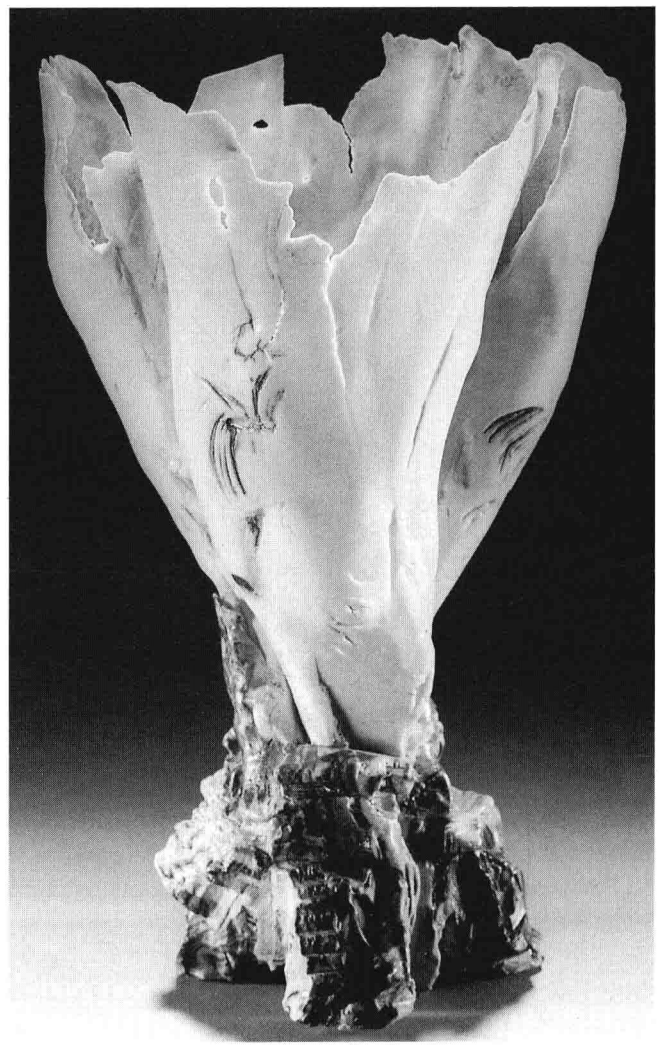
Porcelain Bowl, 30 cm diameter, by Greg Daly, 1993. With etched surface and lustre decoration. This piece has just one glaze containing copper carbonate, but one half is green where the kiln atmosphere was predominately oxidising and the other is red where a reduction has taken place. This is caused when one burner out of four has a reducing flame resulting in a localised reduction occurring.

We are constantly bombarded with images from so many different sources that few can fail to be affected by them. The natural world has long provided inspirational material for creative expression in ceramics but experiences of travel, transport, architecture, urban environments, etc. in addition to aspects of the human condition such as war, famine, social injustice and even family relationships can also act as trigger points for intensely personal work.



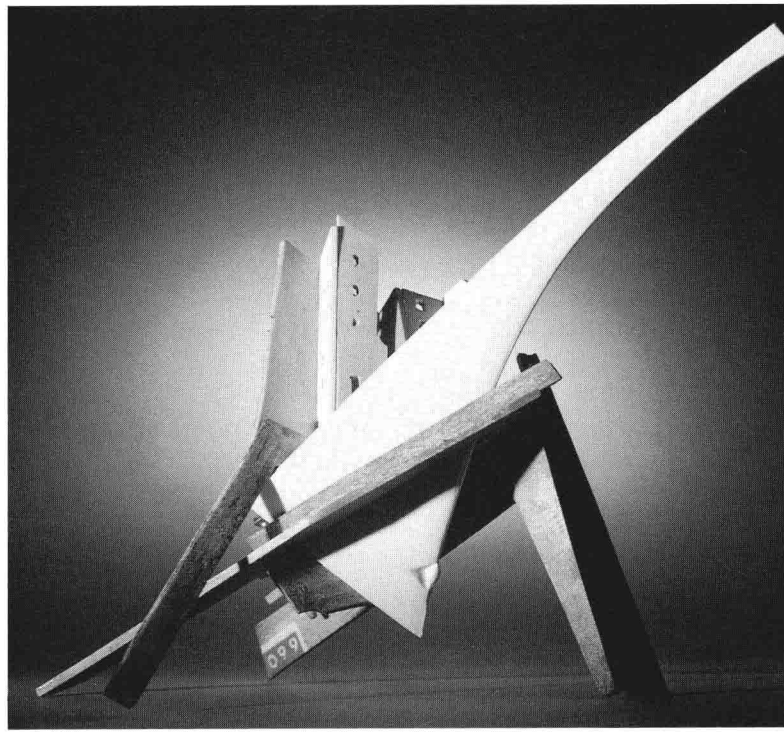
Two slipcast and altered bone china vases with sprayed ceramic stains and fired to 1240°C in an electric kiln, 20 cm high, by Angela Mellor, 1993.

'Bloom', handbuilt, wood-fired porcelain, 33 cm high, by Catharine Hiersoux, 1992.
Photograph by Richard Sargent.



I have been fortunate in being able to select examples of porcelain ceramics to illustrate the text from ceramicists whose earlier work has been included in my previous books and to have discovered and made contact with many others whom I did not previously know. For my part, I found the research involved to be both invigorating and frustrating. The frustrations were constant because the gathering and collating of material together with the concentrated effort of writing allowed no time for me to respond in my own ceramic work to the surge of creative energy aroused by such an amazing diversity of images, or the richness of invention and ingenuity, demonstrated in the work of so many ceramicists included in this book. It is my hope that the selection presented will prove both stimulating and thought provoking. In an ideal world all the illustrations would be published in full colour but, where this has not been possible, dimensions, colours or other detailed information has been provided in the captions to enable the reader to visualise the objects as they really are.

As can be seen in this broad survey of contemporary studio porcelain, there are at least as many women as there are men engaged in ceramics at every level but, for reasons of economy throughout this book, terms such as potter, artist, craftsman, ceramicist should be read as synonymous and applicable equally to either gender.



Porcelain sculpture (unglazed), 'Zone Series 12', thrown, altered and assembled, 18 cm by 12.8 cm approximately, by Margaret Realica, 1990. The slabs are made from finely thrown cylinders which are cut open when they have stiffened slightly. Electric kiln fired to 1260°–1300°C.
Photograph by Robert Aude.

'Container Form', by Lara Scobie, 42 cm × 37 cm × 21 cm. Constructed by building up layers of thinly rolled porcelain (Harry Fraser porcelain body). The textures are achieved by pressing the clay into Indian printing blocks. Oxides and underglaze stains are applied to the texture and then sponged off to leave a residue of colour in the impressions. Fired to 1300°C in a reduction atmosphere.

Laminated and assembled porcelain bowl, 15 cm × 17.5 cm × 17 cm approx., by Thomas Hoadley, 1993.
Photograph by Paul Rocheleau.

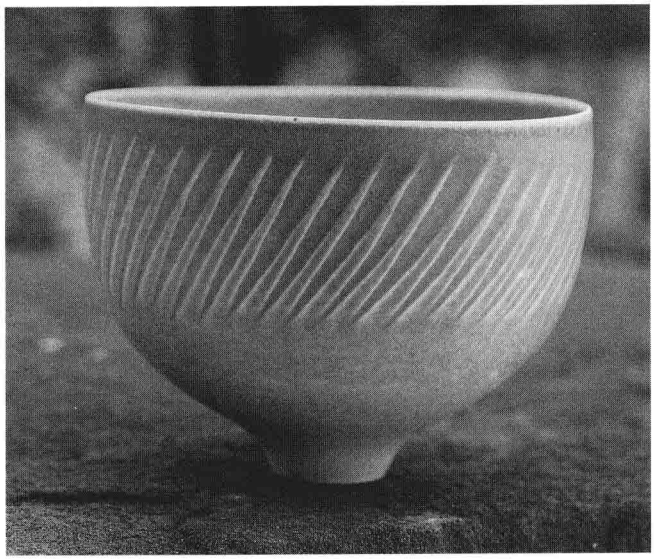
QUALITIES AND PROPERTIES OF PORCELAIN

Composition of porcelain bodies

Despite an abundance of fairly reliable materials available from commercial sources, the search for the ultimate porcelain body free from any disadvantages continues. The ideal would probably be a supremely white body which would be very plastic, easy to throw or handbuild, be able to support itself when wet, have minimal shrinkage, resist cracking or splitting at every stage from wet to dry, be translucent when relatively thick, be strong when fired, and to mature around 1200°C while performing to perfection in any kind of kiln or atmosphere. Even with the advanced technology available to the ceramics industry today, it is unlikely that all these requirements can ever be met but we continue to explore possibilities.

A translucent porcelain body recipe, specially developed for use by the late Audrey Blackman (well-known for her rolled modelled porcelain figures), was published in *Ceramic Review* (No. 100) in 1986. It remains popular with a number of British potters and is as follows:

Porcelain Bowl, diameter 12 cm × 10 cm high, by Karl Scheid, 1992. Wheel-thrown porcelain with diagonal relief carving under a feldspar-petalite copper red glaze fired to 1360°C in reduction. *Photograph by Tomoki Fujii.*



Standard Porcelain China Clay (English China Clays)	50%
Westone – H (sodium activated white Texas bentonite)	5%
FFF Feldspar	27%
Quartz (300s mesh)	17%
Whiting	1%

Another recipe for a throwable bone china body was made for Anne Hogg (see page 46) and this, also, appeared in *Ceramic Review* (No. 113) in 1988.

Bone ash	50%
Super Standard Porcelain China clay	25%
MF4 flux	25%

2.5% Westone – H white bentonite is added to this recipe.

Both these bodies were developed by Anne's husband, Dr Christopher Hogg, and I am indebted to him for the following information.

Both of these bodies use a particularly white and pure bentonite from Texas. The company producing it was owned by English China Clays, but it was sold to Laporte at Redhill in Surrey a couple of years ago. Whether they still import the bentonite into England, I do not know, but it is now called Bentolite H (yes, with an 'l').

From a scientific point of view, whiteness and translucency of porcelain are well understood to the extent of being calculable, given the right information. The properties are dependent on two fundamental properties: light absorption and light scatter. (I am here ignoring the influence of thickness, which, although very important, I take as being obvious.)

Light is absorbed by colouring metal ions, usually iron and titanium in clay bodies. Light is scattered at interfaces between the glassy matrix and the crystalline phases present such as mullite from the clay, and undissolved quartz. Colouring metal ions reduce both translucency and whiteness. Crystalline phases reduce translucence but increase whiteness. The whiteness and