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COMPUTER ARTS SOCIETY QUARTERLY SUMMER 1985

TEXTILE DESIGNERS

ANIMATION AND COMPUTERS

STEPHEN BELL INTERVIEWED



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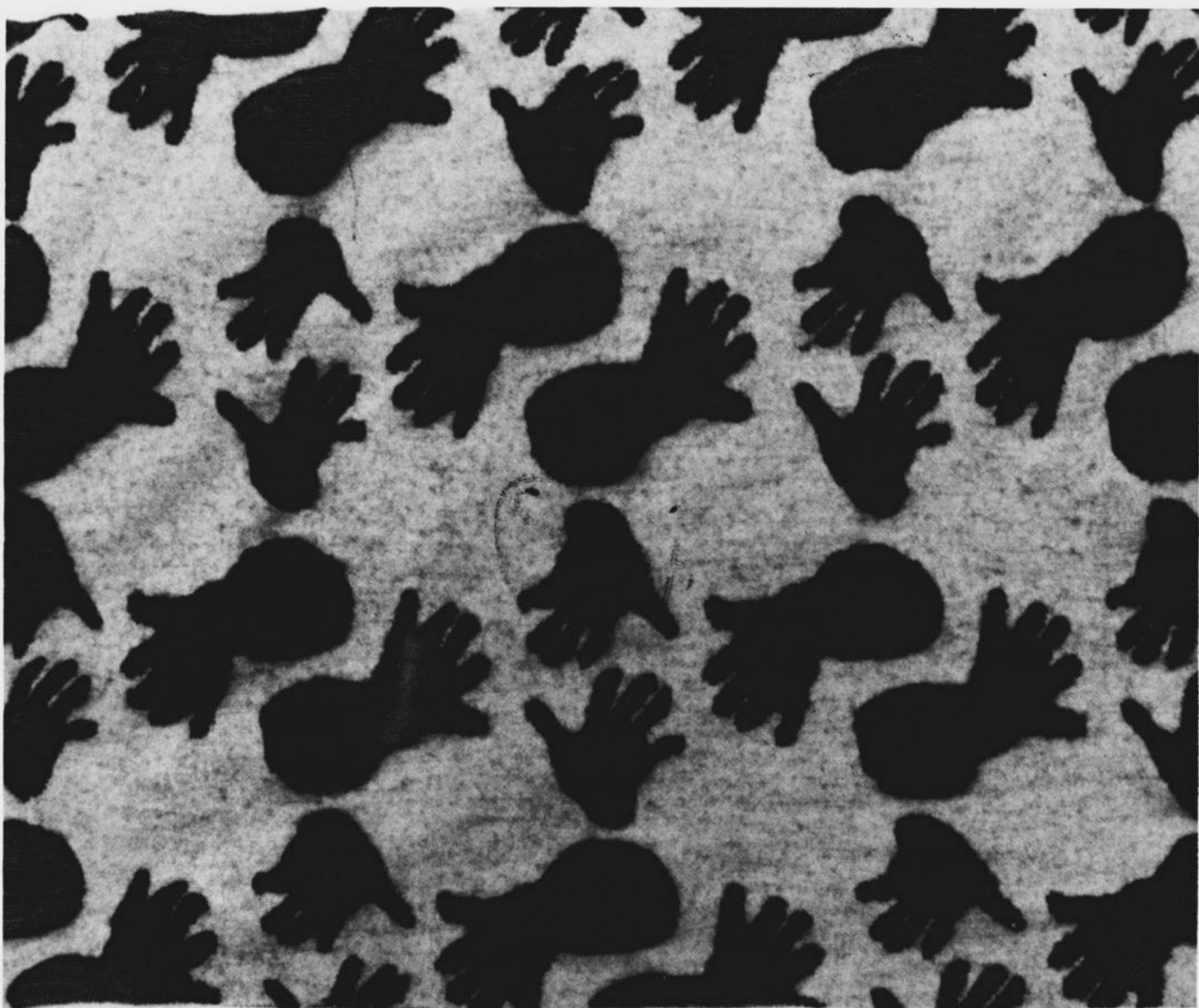
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VICKI CLARK

A collection of knitted jersey fabrics designed on the Morat mk 11 computer knitting machine. The fabrics were treated afterwards to give different tactile and textural qualities. Natural and man-made yarns were used.



Vicki Clark

SOFT KNITS AT THE RCA by John Foulds

The textile school at the RCA is probably in a rather unusual situation in the college. Computer controlled or programmable machinery is available, or under development, for all methods of textile manufacture: knitted, printed and woven. The same is also true, to some extent, in the manufacture of certain garments. This has necessitated the development of computer systems to prepare all the necessary information to operate the machines and in some cases this has included computer aided design equipment.

Thus in many areas of textile manufacture it is already "normal" to manufacture the product by means of a CAD/CAM system.

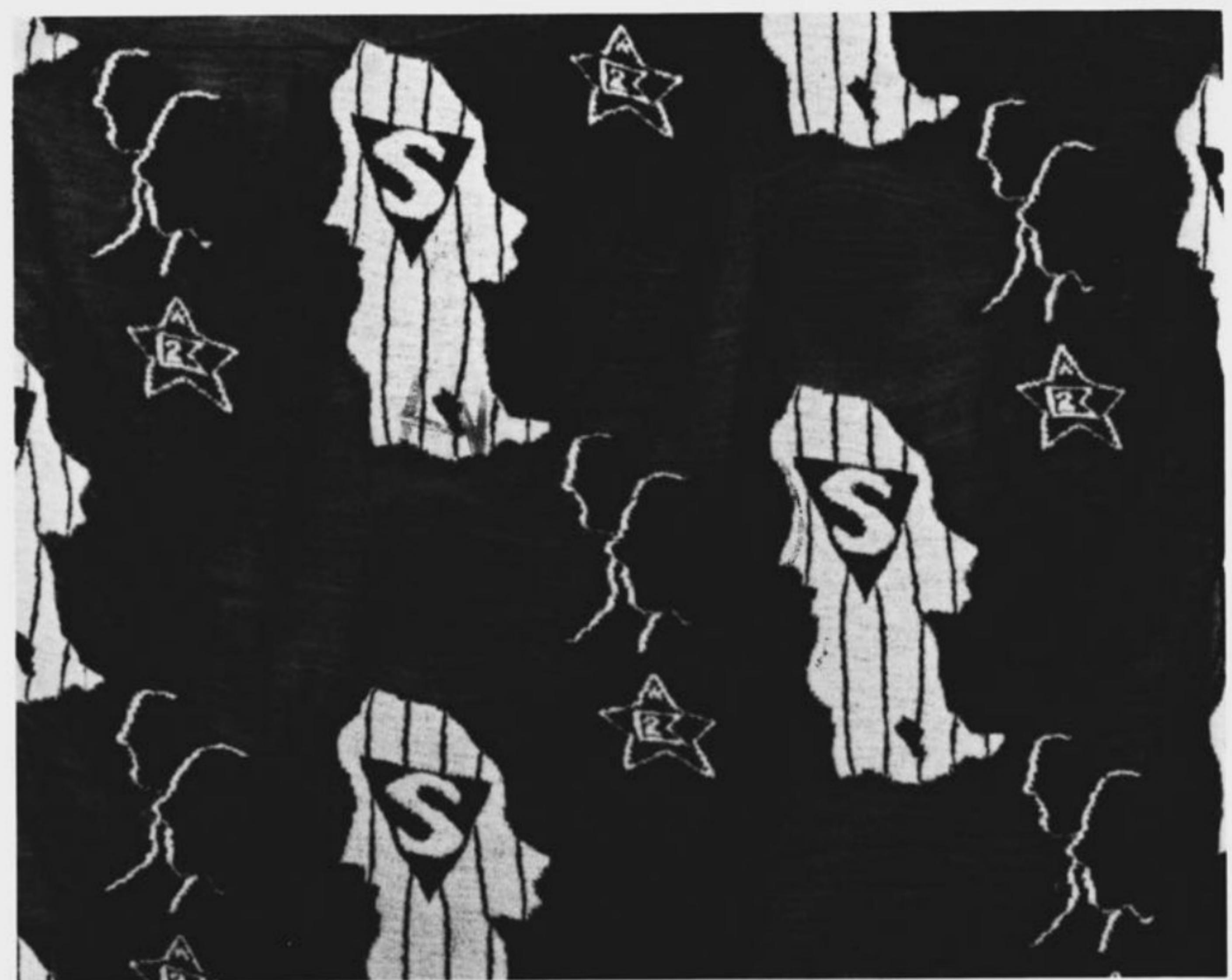
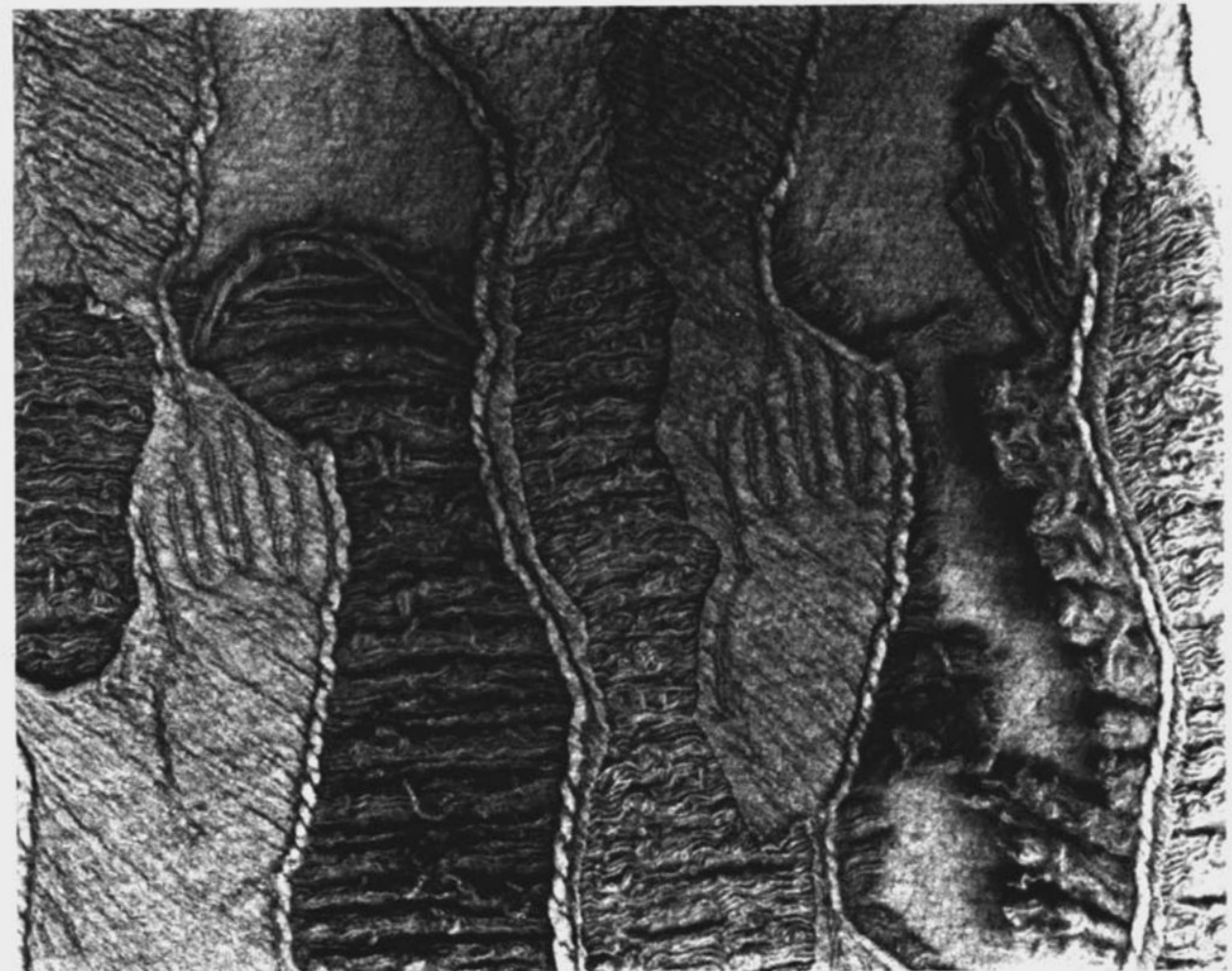
The school therefore has computing equipment dedicated to operating particular machines, and this is usually in the form of a system which will allow the designer of the textile produce to input design information about the product (pattern, colour, structure, shape), usually in one or two different ways, and then to interact with the information once it is in the system. The interaction can be quite varied, and is normally viewed via a colour display. Information can be added or subtracted, shapes changed, enlarged, reduced, mirrored and viewed together with previously stored information - indeed most of the variations which a designer might wish to bring about for a particular textile product. The interaction is normally brought about by drawing on a tablet with a pen, and selecting changes of function via a keyboard.

It is important to stress that the software for the textile systems is, naturally, written in a textile format, so that everything which appears on the colour display will be in the form of stitch information and so on.

Having said this, most systems possess some functions which could be of general interest.

The knitting machine system includes:

- (a) Automatic photo electric colour scanner. This scans a prepared drawing, is tuned to recognise four specific colours, and inputs the information to the colour display.



Vicki Clark

Photographic work can be scanned, but the resolution is relatively coarse, and results somewhat erratic.

(b) Tape punch - to store design information on tape.

(c) Hewlett Packard 2100A computer and disk storage unit.

(d) Command/display terminal - a black and white display with keyboard through which instructions are passed to the computer.

(e) Teletype output for hard copy etc.

(f) Colour design console with input tablet. This is the central design console which, in addition to the normal functions of a colour display, has "tunable" controls on all colour channels which is, of course, an important consideration for textile design.

(g) On line controller for knitting machine - this means that whatever appears on the colour screen, the knitting machine will knit.

For weaving the department has some additional equipment:

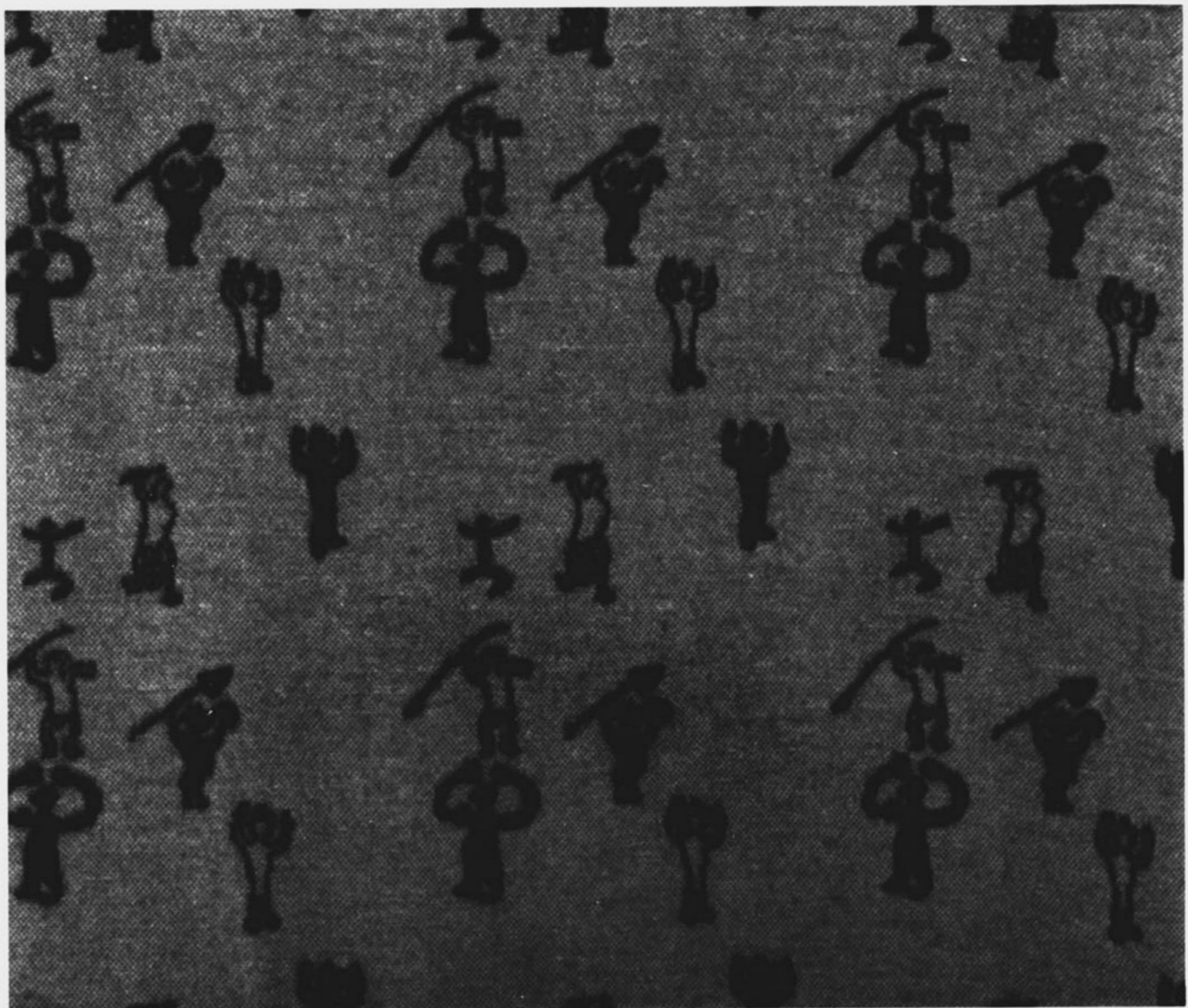
(a) BBC computer with single disc drive and high resolution colour display.

This allows the designer to input weave information via a keyboard and build up and change weave structures displayed on the colour screen. Obviously the software is written specifically for weaving but, as this is a standard BBC, the system can obviously be used with other software just like any other BBC computer and display.

(b) Colour printer - to put out a record of information held and displayed on screen. This printer has an extra buffer store so that printing can continue whilst the computer is still in use for other purposes.

(c) On line controller for weaving machine - again whatever is on the screen the loom will weave.

The school obviously tends to use the equipment



4.

SHELLEY NORTH

Shelley uses double jersey fabric caught together every twelve stitches enabling layers to be cut and rolled back.

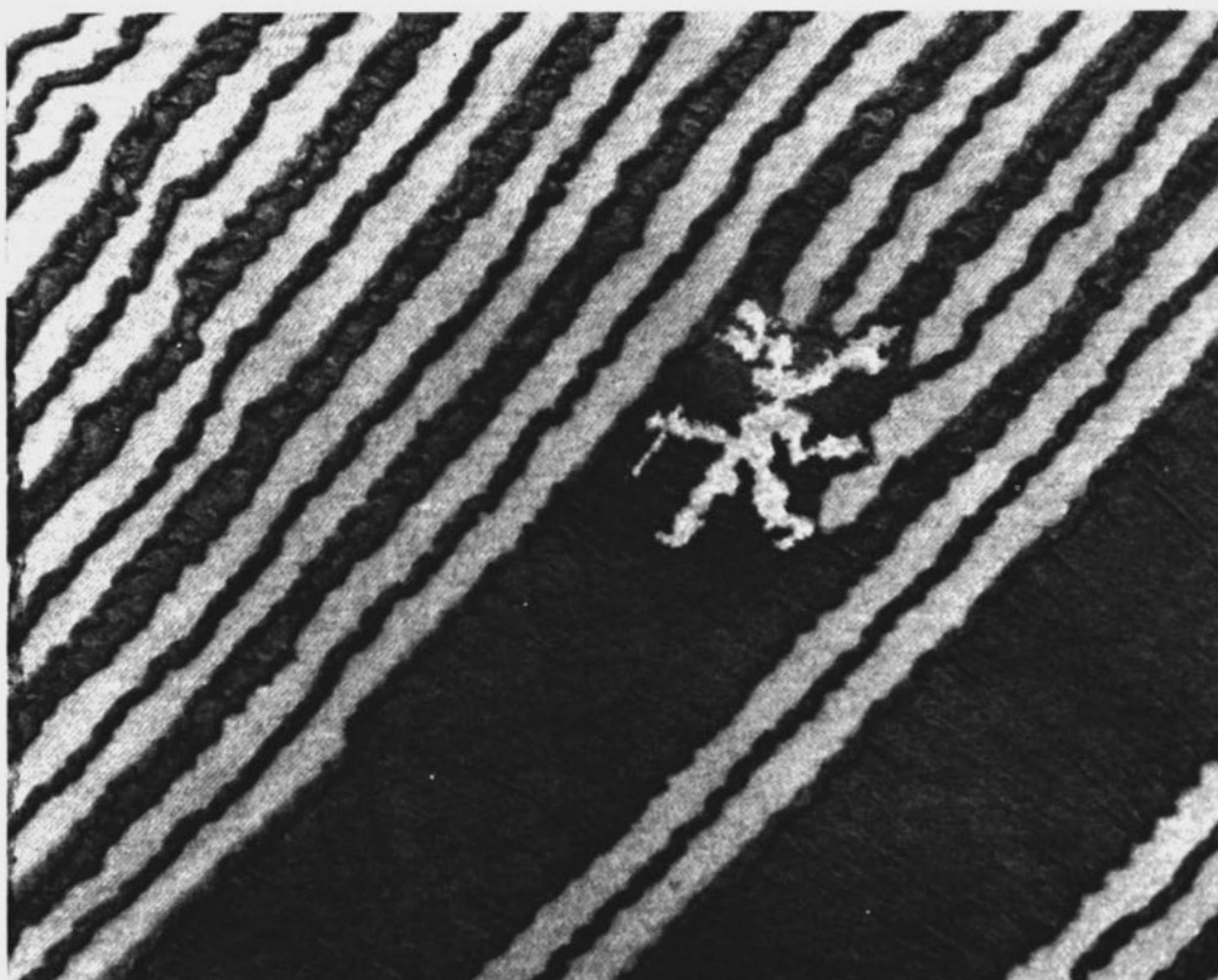
1. Cotton man motif on cotton background with wool top layer cut and milled.
2. African heads in wool and rayon. The wool motifs appear to be flocked.
3. As 1 above but with eagle and snake motif.
4. As 2 above but with man motif derived from cave paintings.

simply as a means to an end - it means the knitted or woven fabric can be realised very quickly and easily with many more opportunities for variations.

The school would like to obtain a greater variety of dedicated computer controlled equipment, in particular it is now possible to obtain computer controlled knitting systems upon which it is possible to manufacture not only patterned and textured fabrics but shaped panels and even complete (whole) garments. The ability to specify and construct almost any kind of three-dimensional knitted constructions is obviously of interest not only for textile and fashion designers.

Apart from the uses already described, the school has tended to use (non-dedicated) computing to simulate complex patterns or constructions, before going to the trouble of manufacturing the textile product.

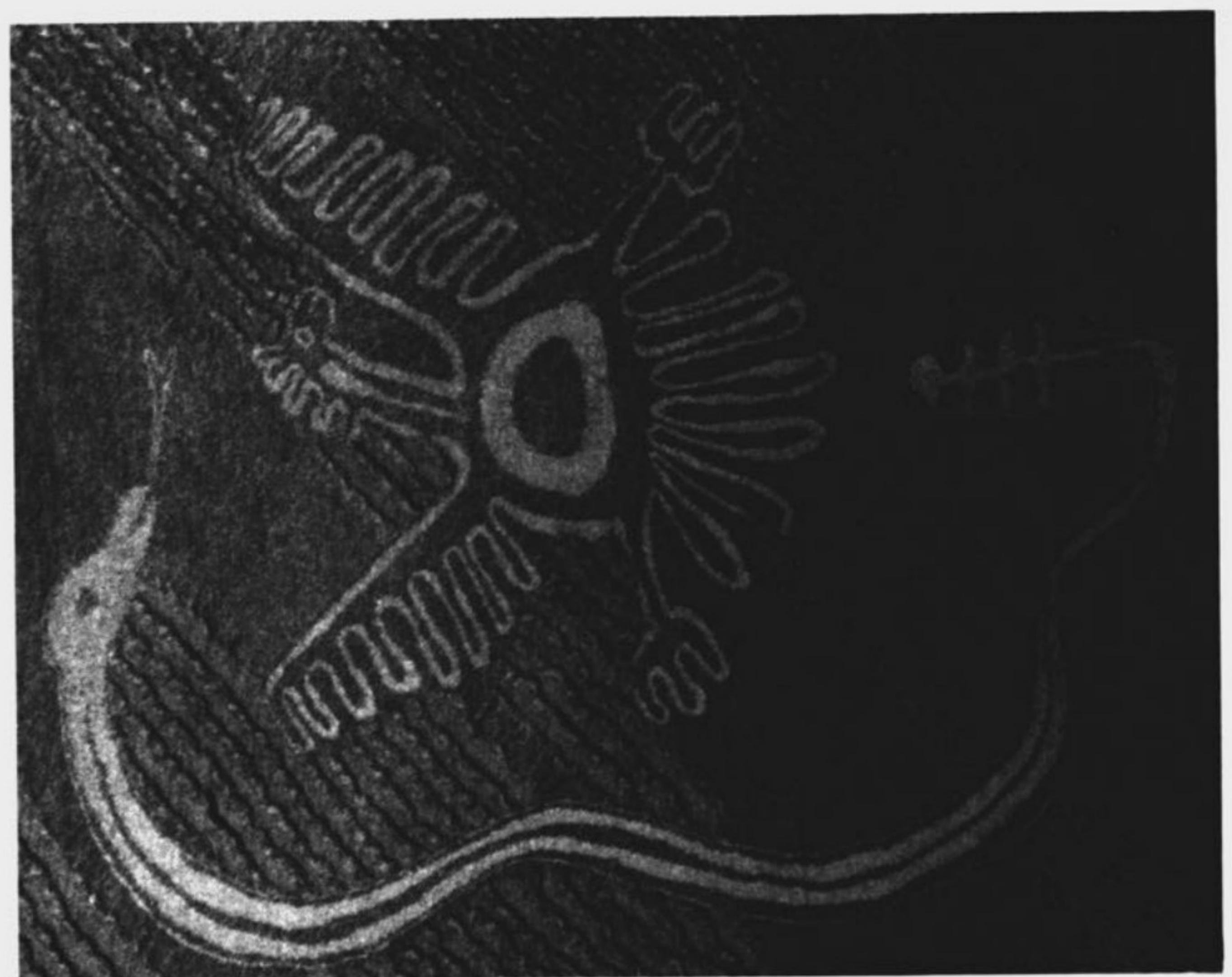
John Foulds is Head of the School of Textile Design at the RCA



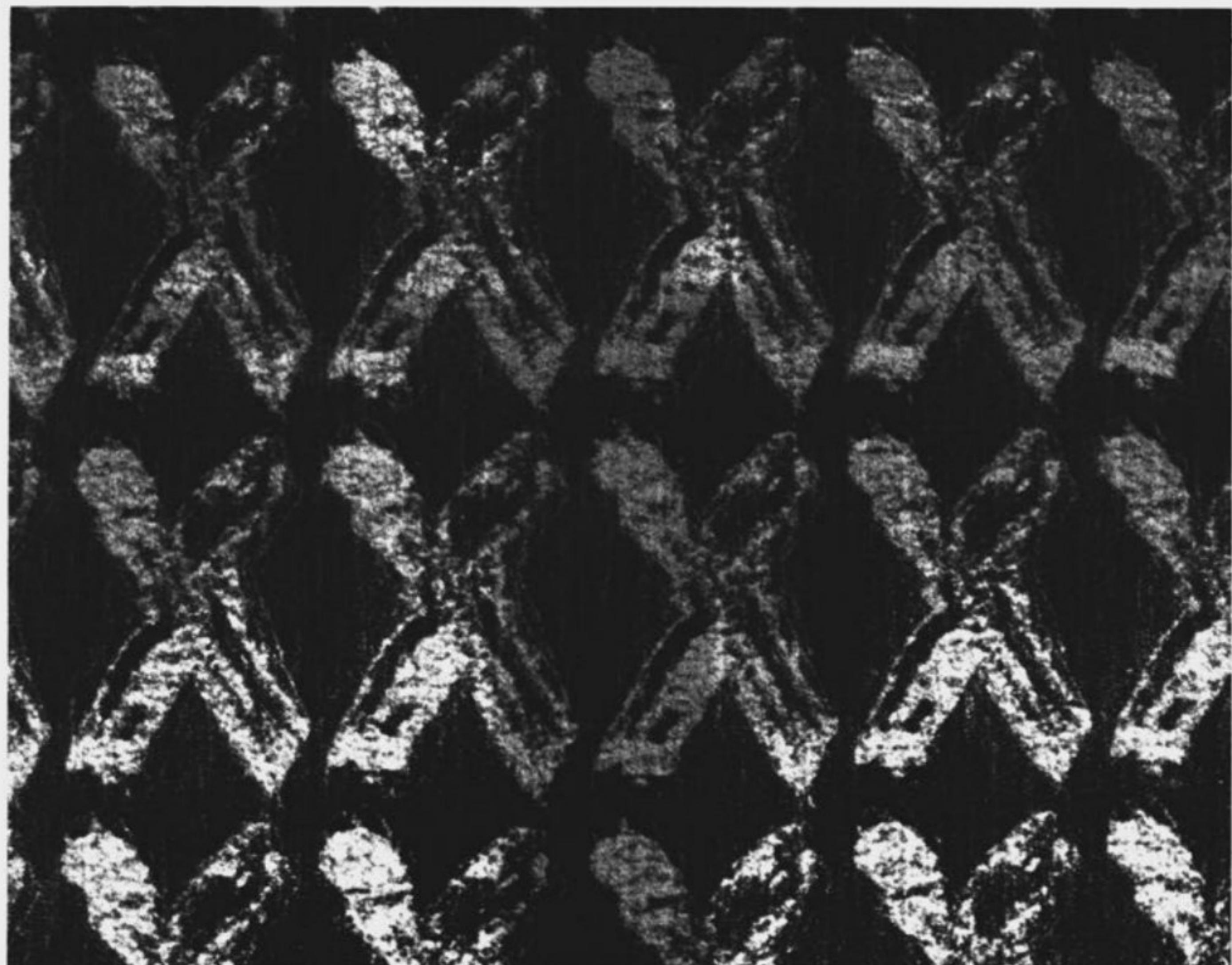
1.



2.



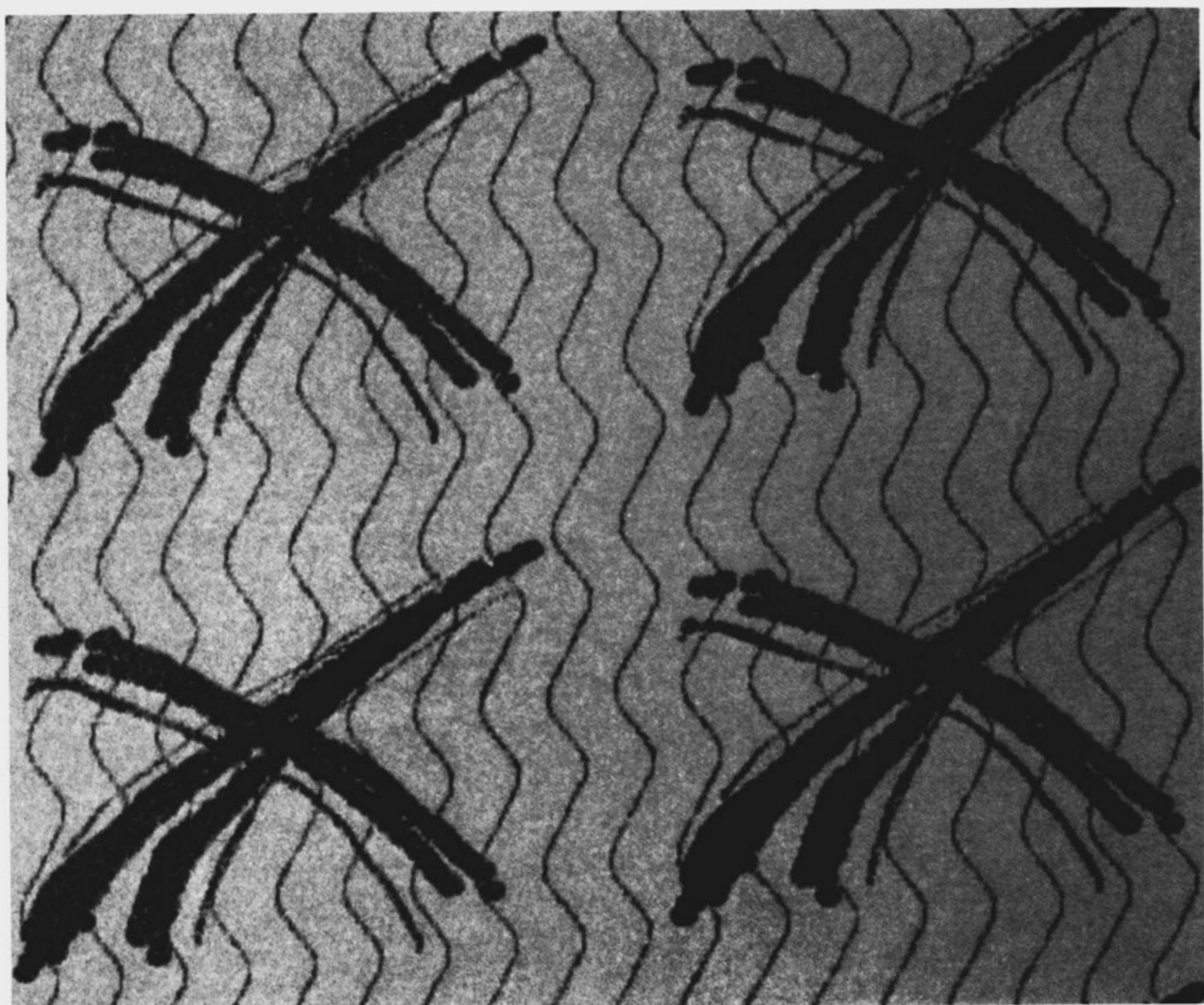
Shelley North 3.



1.

PHILIPPA GRIGGS

1. Yellow and black fabric length in wool and lurex milled to give a blanket feel.
2. Yellow fabric length in wool and nylon. The crosses are in nylon for a devoreed look.



Philippa Griggs 2.



Ted Houghton



JACQUARDS JUMP BACK by Ted Houghton

The popularity of jacquard fabrics surged in the early 1950s but terribly uncomfortable synthetic fibres were used and people came to regard jacquard unfavourably. As a result, computer aided design facilities are not readily available in this country.

At the RCA, however, I have had the opportunity to use a Ski-Tex circular industrial machine with the excellent advice and help from the technician, Ganyek.

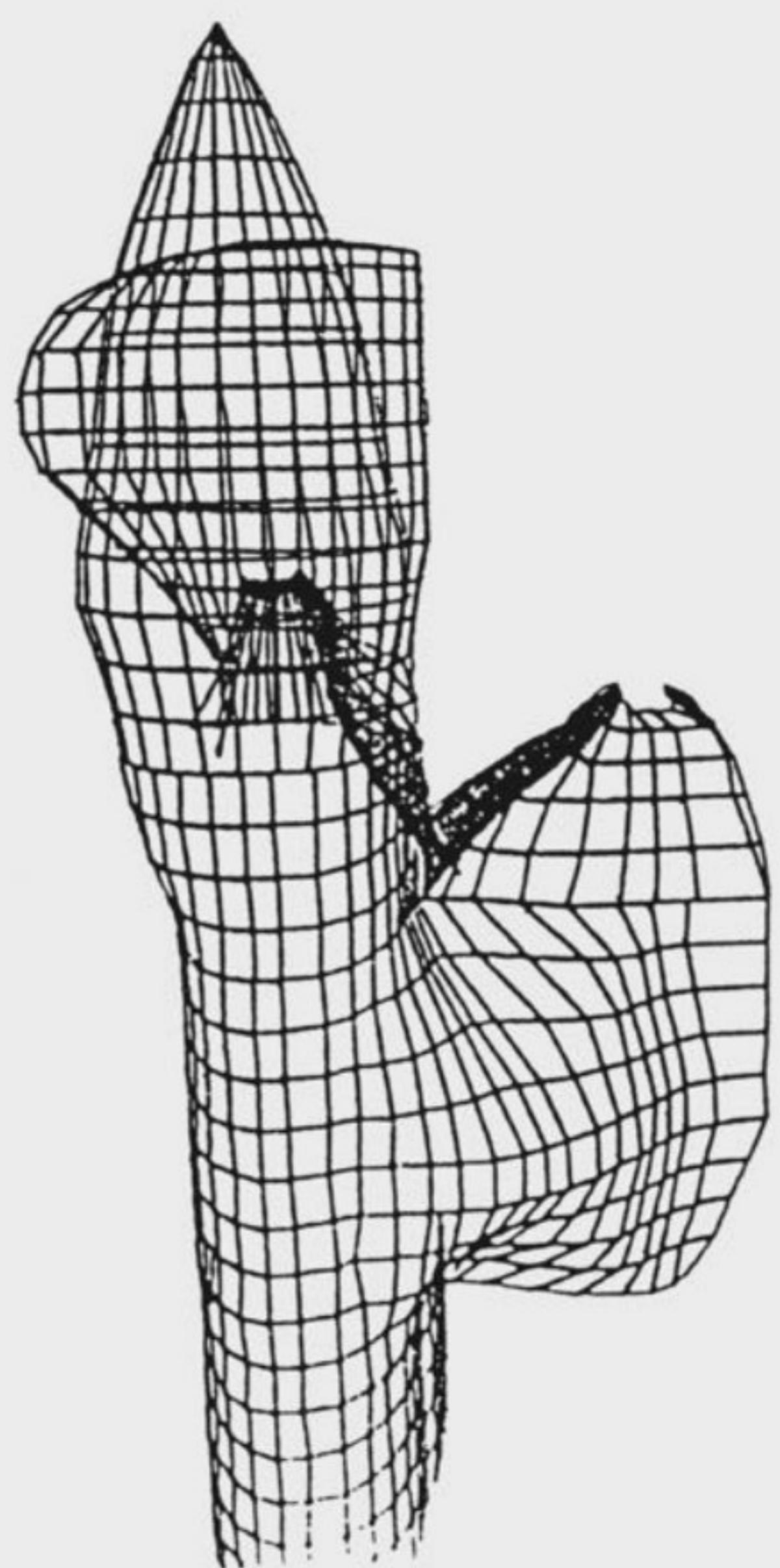
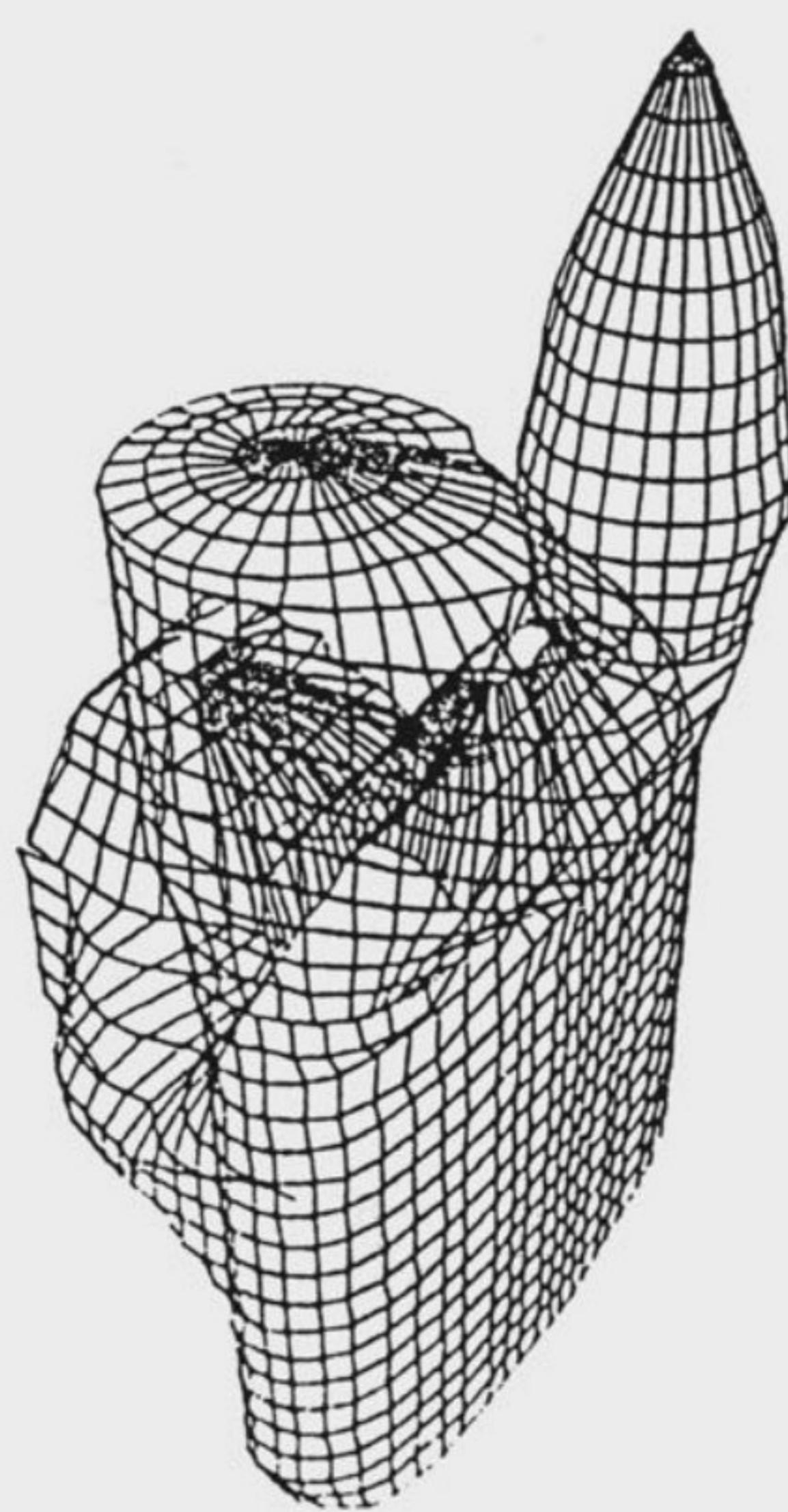
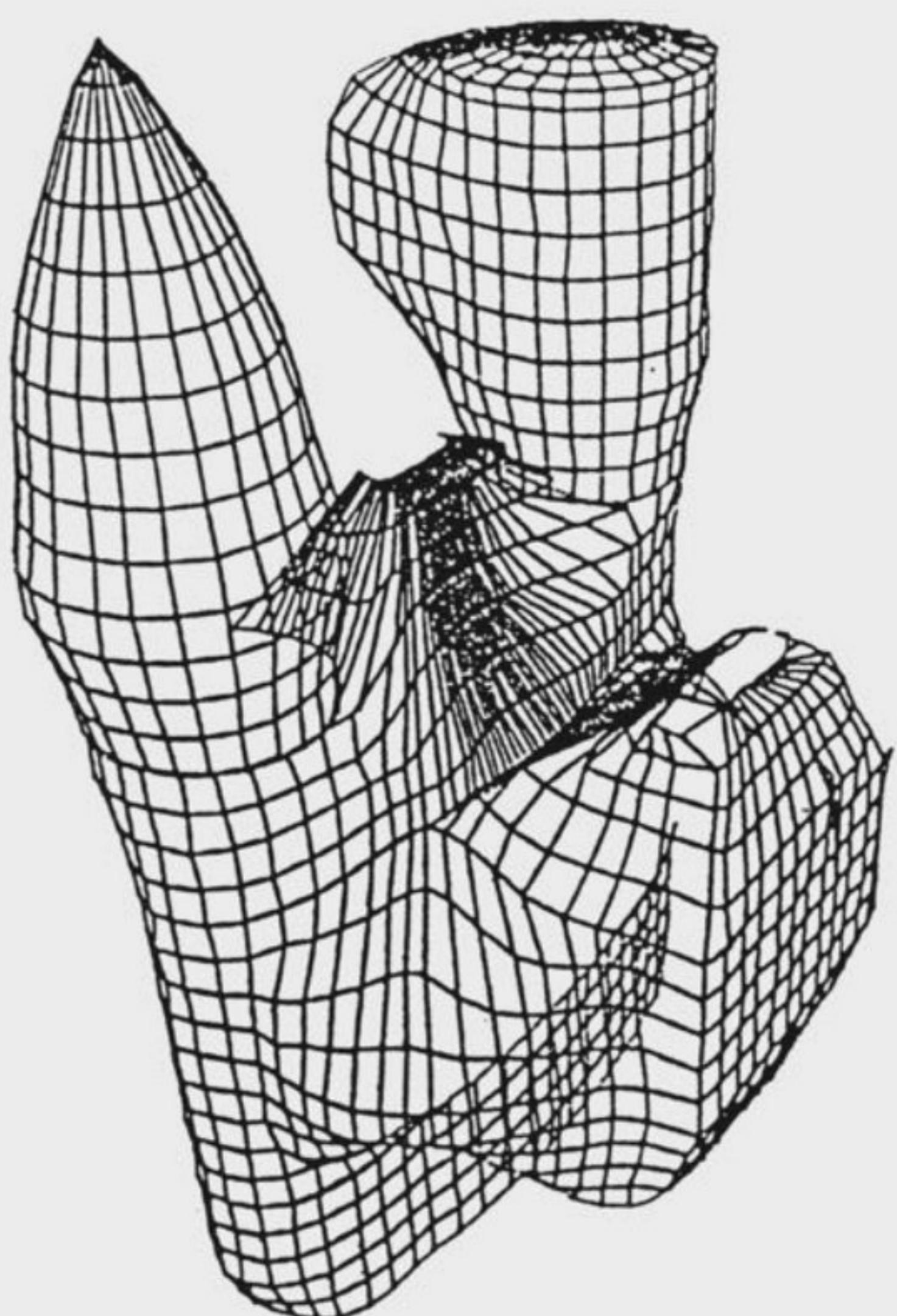
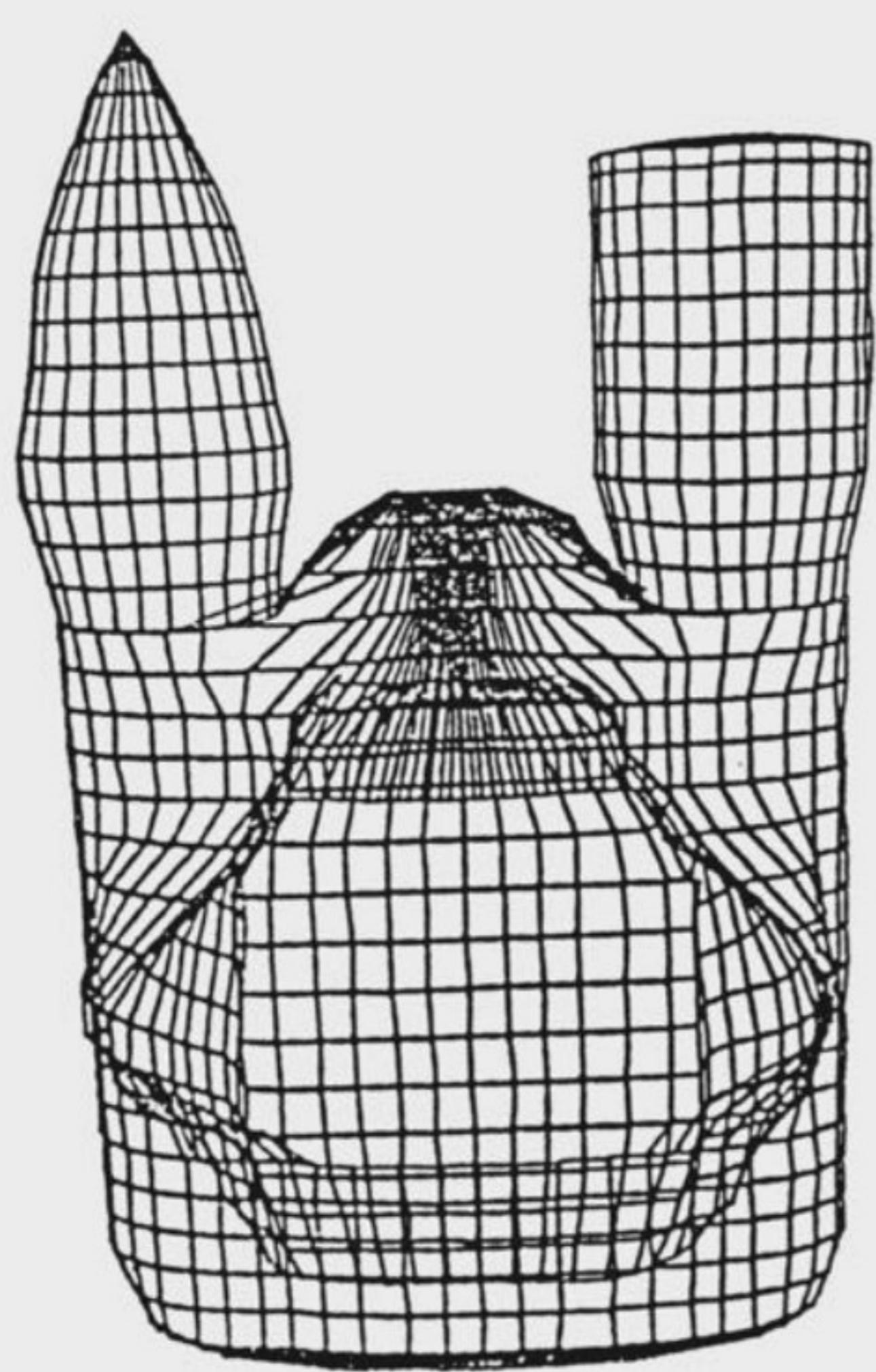
I have created my fabrics with mainly natural fibres for desirable, comfortable textiles which are pleasing to wear and handle.

Jacquards are currently being re-evaluated but the quality of the fabrics will have to remain very high in both design and construction. In the 1950s the British companies that used to finish jacquard fabrics did so to a very high standard. These facilities have virtually disappeared now and the knowledge gained in the fifties is having to be relearned for the jacquard revival.









WILLIAM LITHAM '85

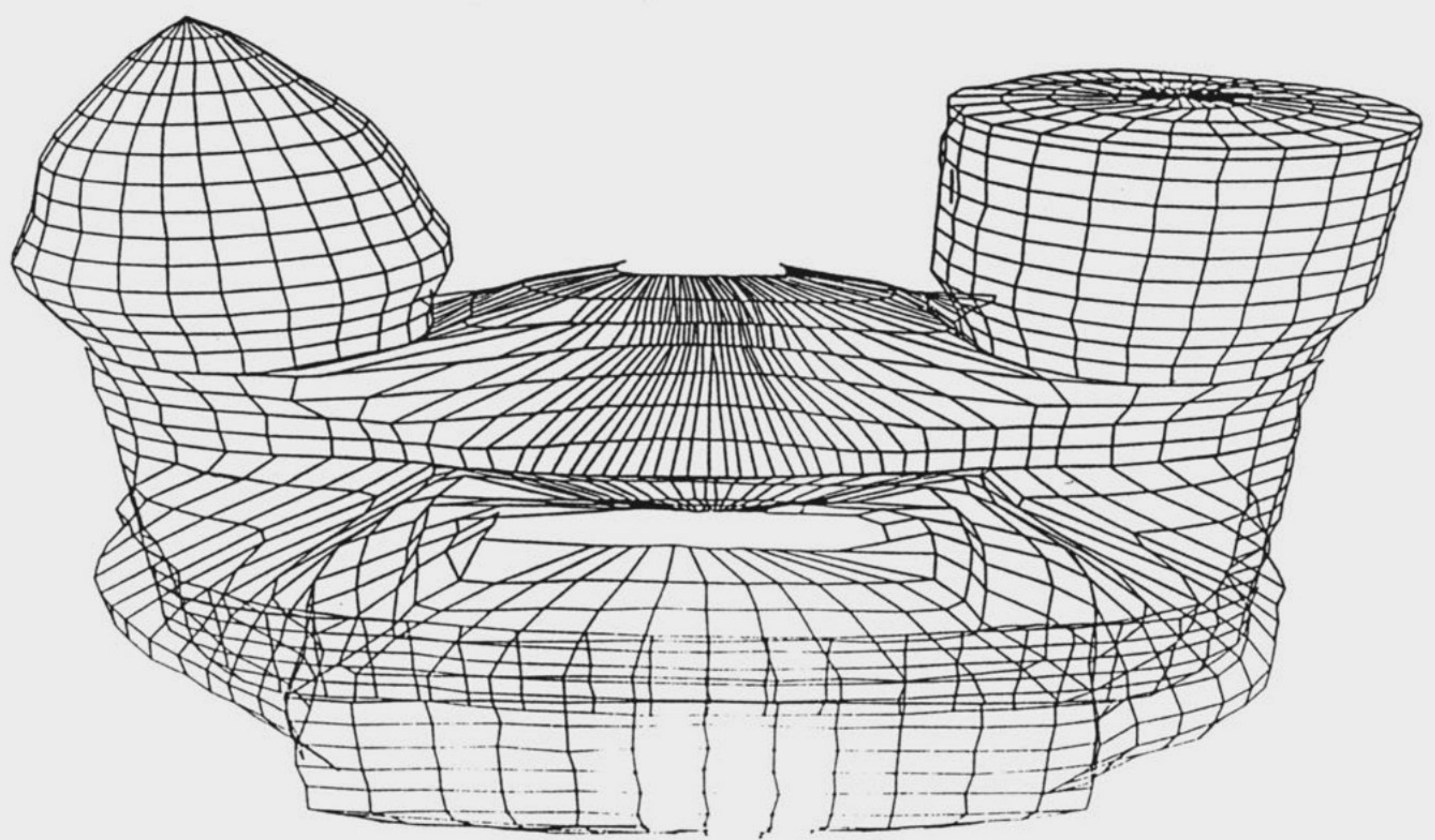
ANIMATED IMAGES by Susan Iversen

A major project using computer imagery is currently being undertaken by William Latham, a student at the Royal College of Art. Approximately 4,000 blocks of hard copy artwork will be assembled to produce an animated film.

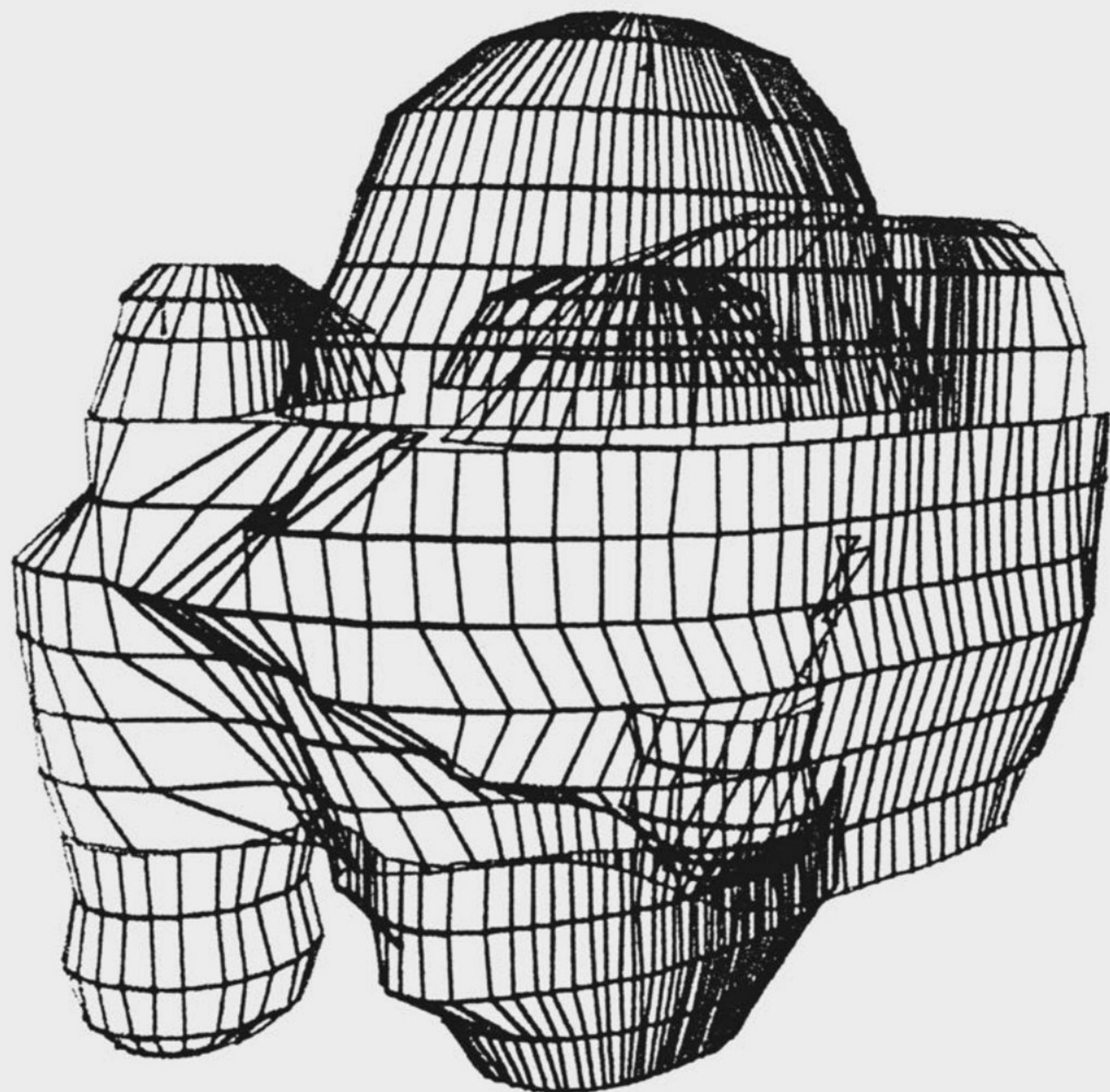
To produce the film, an original form is created and digitized. This first image is then transformed using a 3-D program from the Picasso Library. The so-called "embryo" first shape is stretched, turned, and sculpted into various new organic-like forms. The computer graphics system allows the artist to work quickly and as if free from gravity since the shapes can be rotated in space and seen from all angles.

Each print is drawn on a Benson plotter which has a rotary drum printer. William uses a Deck 10/Deck 20 computer to program his designs at the City of London Polytechnic's computing centre. This system is powerful enough to produce complex sculptural figures which can be rotated and manipulated. He also makes use of the facilities in the animation department of the RCA film school. The film incorporates music by Javier Acuarez from the Royal College of Music.

The final product should be about three minutes long and will cost about 300. If anyone is interested in the project and would like to contribute financial help, William is looking for a sponsor. He can be contacted through the department of printmaking.



WILLIAM LATHAM 85.





ANIMAL MAGIC

Karen Mahoney talks to computer artist Stephen Bell

KM How did you get interested in using computers?

SB It all grew from an interest I developed in making work by setting and following procedural rules. Originally, I was fascinated by the whole idea of an "artificial brain". Then I saw Chris Crabtree's work which made me think about the possibilities of inventing imaginary worlds with their own independent rules. I came across the 'Game of Life' shortly after beginning to use computers at the Slade in the experimental department. It had considerable influence on quite a few people and certainly affected the type of work I was doing at the time. The idea of using animals as models came after seeing Chris Crabtree's work. I thought that it was a wonderful notion. After all, my attitude to landscape painting is, in part, that the real world is there to see. Why spend time trying to represent it when the real thing is so much more rewarding? In the real landscape there are macro and micro worlds, the structure is so complex that it simply can not be encapsulated in a picture. The computer, on the other hand, offers the possibility of creating an artificial landscape in which people or, at least, the models or 'animals' which they design, can move around. A landscape in which the rules can be known, controlled and altered. The rules that I am now using to generate images are so complex that it would take a very long time to follow them without a computer.

KM This idea of an artificial landscape or environment is obviously very central to your work. How did it develop?

SB At art school you had to constantly justify what you were doing. So there was a lot of discussion about 'what art is'. My own conclusions were that a large proportion of it is to do with a kind of experience, a particular kind of perception. Art is not just related to objects. Objects are one class of art - things which have the potential to invoke an aesthetic experience. Art, then, is fundamentally to do with something inside a person's mind: a way of leading people to have experiences which they can classify as art. At Bristol, in my undergraduate class, many



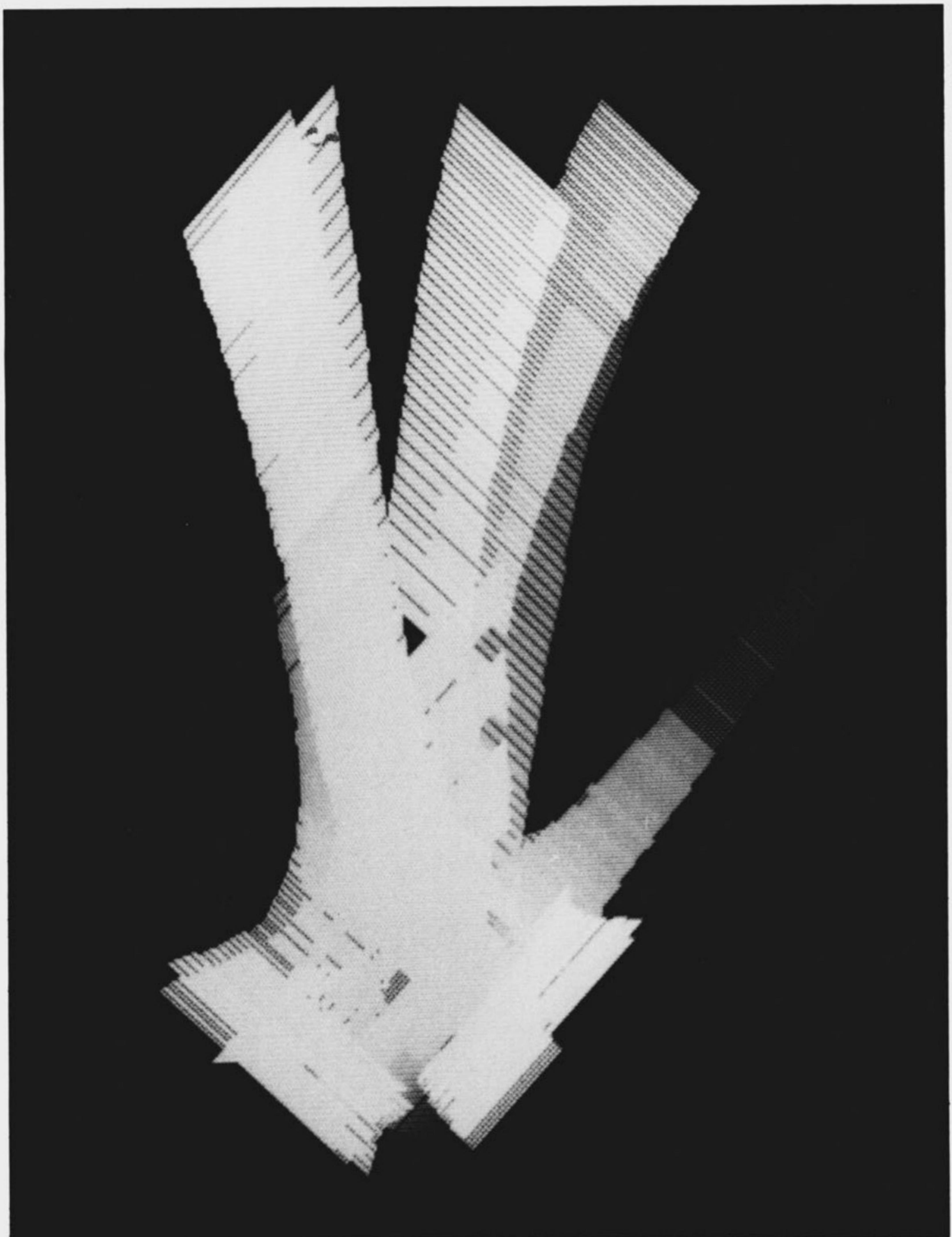
of us were interested in what people like Hamish Fulton and Richard Long were doing. They did not make conventional representations of the landscape. Instead they did things with it and in it. I became involved with the concept of orientation: the attempt to manipulate the environment so that the resulting art experience helps you to place yourself in existence. To make this clearer, it can be schematised as a moment when the construct in your mind coincides with the outside world.

KM You mean a type of euphoria?

SB Heightened perception, generally a feeling of rightness. Sometimes it is euphoric, but it is relative. I am concerned with changing relationships being rigorously systematised. In the real world we force or recognise patterns that are not there in reality. In my programs they really are there. The rules of relationship and interaction can be traced back. Scientific analysis tries to look for rules in nature. Looking at my pictures is a very different situation because the rules are there - programmed in. In the natural environment they may not be. So my artificial worlds are actually a much more secure place to work in. They do have a little in common with landscapes - I think someone once said something about English painters never being able to get away from landscapes - but the likeness is only at a very obscure level. I suppose that some of the same sensibilities are there in, for instance, my use of aerial perspective. Like landscapes, too, the images record a particular set of relationships. But the frustrating thing that I found about landscapes is that you can never get everything in whereas, with an artificial landscape or world, it is easier to include all that you want.

KM Can we talk about the images themselves? What sort of spectator response have you had?

SB Well, as I have said, I was trying to record a changing relationship between recorded and interacting rule systems. These interactions can be represented as being analogous to the rules that seem to control animal behaviour. It is, in fact, a very traditional thing - images as a record of moving elements and their changing relationships. What is important to me is that people should recognise the images as being to do with movement which is, after all, just a changing



sequential relationship. In fact I am very pleased to be told that the images look like fireworks, time exposure trials, photos of the banner waving that is used in Chinese gymnastics. A zoologist at Kent University said that they look like scatter patterns resulting from schools of fish being attacked by a predator. All these analogies are to do with movement, a realisation that there is some suggestion of a start and a finish, that the mark has been drawn rather than that it came up instantaneously as a finished piece. This is what I have been trying to represent and I seem to have done it successfully.

KM You talked earlier about the possibilities of creating worlds with which the spectator/participant could interact. Are these programs interactive? Is it possible for everyone to make their own images?

SB No. Really I am encapsulating my own ideas and assumptions in these particular programs. It is not really possible to use one of my programs to produce your own artwork. In these images the final product has to stand alone as the artwork rather than merely as a trace of a process which itself is the artwork. The images have to work independently so that the business of discrimination and selection is crucial. During the residency at Kent I have been looking at one particular aspect of artificial environment. But, yes, ideally I would like to produce interactive work. It is a lot of work though and needs to be very sophisticated if it is going to work well.

KM So is that going to be your next step?

SB I think that having succeeded in recording movement I now want to see what will happen if I use animation. It is a whole new field. Or perhaps I should say a whole new world!

Stephen Bell is Artist in Residence at the University of Kent at Canterbury (1984-5). Born in Rugby in 1955 he has exhibited computer generated images both at home and abroad. Bell programs in 'C' on a VAX 11/750 linked to a SIGMA graphics terminal. The hard copies of the images are photographs taken from the screen.

COMPUTER ARTS SOCIETY

BRITISH COMPUTER SOCIETY SPECIALIST GROUP

MEMBERSHIP AND SUBSCRIPTIONS

The Society aims to encourage the creative use of computers in the Arts and to further the exchange of information in this area. The Society is a Specialist Group of the British Computer Society, but membership of the two societies is independent. Membership is open to everyone at £4 per year. Members receive PAGE four times a year and reduces prices for the Society's public meetings and events.

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The Society holds regular meetings at 6.30pm on the first Monday of each month at the Department of Design Research, 1st floor, 24 Kensington Gore, London. Members and guests are welcome, there is no charge.

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