

# News of the arts

## New dimension in visual arts

A Canadian scientist, who is also a serious painter and sculptor, has pioneered a promising new technique in the visual arts.

The paintings of Dr. David Makow, a research scientist with the National Research Council in Ottawa, shimmer with brilliant, shifting colours, that seem to change as one moves around them or, in some cases, just by looking at them for a few minutes; on one painting an image of the moon vanishes slowly when a heat lamp is shone on it, only to return when the lamp is turned off.

Dr. Makow's works were painted using chemical liquid crystals. Discovered in 1889 by an Austrian botanist, these organic compounds were known to share some of the properties of both ordinary liquids and crystalline solids, but interest in them lagged for many years as they were considered merely a scientific curiosity, with little or no practical application.

In the past ten years, however, scientists have found them most suitable for many new technological applications, particularly as watch-and-calculator displays and sensitive temperature indicators. Recently, they were also shown by Dr. Makow to offer attractive possibilities as a medium for artistic expression.

Dr. Makow's work in NRC's Optics Section involves studies in several areas of the science of colour, particularly those concerned with coloured materials. He was assigned the study of the optical properties of liquid crystals some two years ago, but had earlier developed an interest in these materials in his spare time as a

With increasing leisure time at their disposal, Canadians are taking a more active interest in painting as a hobby, and as liquid crystal paints become better known to the general public, a potentially lucrative market could open up for Canadian companies specializing in art supplies. At present, liquid crystal paints are very expensive (typically selling at hundreds of dollars a litre) and have to be imported from the United States as there is no Canadian source. Already, a substantial number of artists have expressed an interest in these paints, and the prospects for a new commercial venture in art supplies are improving.



One of Dr. Makow's sculptures.

painter and sculptor.

"A blotch of blue paint looks blue to you because it absorbs most colours and scatters blue light," explains Dr. Makow. "Cholesteric liquid crystals, on the other hand, absorb very little light. Transparent to most colours, they reflect light of specific colours strongly, the wavelength of the reflected light depending on such factors as the chemical nature of the cholesteric liquid crystal, its temperature and the angle of illumination and observation. The reflected light also shows unexpected additive properties. That is, if you superimpose a red-reflecting layer of liquid crystal on a green-reflecting layer, the result looks yellow, while ordinary red paint mixed with green paint would look grey-brown as most colours would be absorbed."

According to Dr. Makow, there is considerable potential in art for liquid crystals. Because of their unique optical properties, they can be used to make spectacular sculptures and paintings that respond to the environment and the individual viewer.

"If you walk by them, their brilliant colours change; if the room gets colder or warmer, even marginally in some cases, they also change," he said.

"It is in fact possible to make a painting with several superimposed liquid crystal layers, each of which produces a picture over a limited temperature range; for instance a summer scene when the ambient temperature is 24°C and a winter scene when the room temperature drops to 18°C."

## Film Board honoured

The fortieth anniversary of the National Film Board (NFB) of Canada was marked by a tribute from the Academy of Motion Picture Arts and Sciences in Los Angeles on October 29.

Canadian-born actor Lorne Greene was master of ceremonies for the gala, which was co-hosted by Canadian Consul-General Raymond C. Anderson. A reception was followed by the screening of Oscar-winning Board films.

Marvin E. Mirisch, first vice-president of the Academy and C. Griffith Johnson, executive vice-president of the Motion Picture Producers Association of America presented certificates of commendation to NFB Chairman James de Domville.

"Canada has led the way in the development of the documentary film," Mr. Mirisch said. "The NFB has provided guidance and inspiration to a generation of young filmmakers who now are among the world's leading professionals." Mr. Johnson said the Board "has honoured not only Canada, but the film community throughout the world".

Mr. Domville told an audience of 600 that because of Government support the Board is not faced with the commercial pressures of private companies and can experiment with projects that may not be commercially successful.

The Academy was presented with 23 prints of National Film Board films, which will complete the Academy's library of NFB Oscar winners and nominees.

The Board's films have won 35 Oscar nominations, five Oscars and more than 1,600 other awards at international festivals and competitions.

## Arts brief

The Canadian Film Institute (CFI), based in Ottawa since 1935, recently opened a Toronto office. Ted Riley, assistant to the executive director, said the opening was an indication of CFI's desire to continue to act as a "mediator" between the private film industry — now mostly in Toronto — and the Government. CFI, which this year has a budget of \$800,000, is supported by both sectors. "Our government funding is about 12 per cent," Mr. Riley said.