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GOVERNMENT INVESTIGATION OF ICE CON- DITIONS IN THE GULF OF ST. LAWRENCE.

The Federal Government in arranging on the open-
ing of navigation for a patrol service by the Canadian
Government steamship Montcalm in Cabot Strait for
purposes of ice research and present warning to ocean
shipping of ice conditions is tackling in a commendable
way the problem of removing from the St. Lawrence
route and the public mind an element of doubt and danger
which had always haunted those using it. The further
recommendation by a committee appointed to investigate
the present pilotage system in the Gulf of St. Law-
rence, advising a radical change and abolition of present
methods, is another step in the same direction.

As regards the research work, the Government has
arranged that Prof. H. T. Barnes, of McGill University,
with a staff of assistants, shall be on board and carry
out further experiments and demonstrations with his
microthermometer. Prof. Barnes and his studies of ice
problems are becoming so well known in the world of
science that it seems almost unnecessary to recall to
readers what a boon to shipping Prof. Barnes, in per-
fecting and developing the microthermometer, has
created. In theory it is a very simply designed ap-
paratus. It consists of a coil of wire of approximately
125 ohms resistance enclosed in a metal bulb and
placed just below the surface of the water at the
side of the ship. This coil constitutes the resistance in
one of the four arms of an ordinary Wheatstone bridge.
Two of the remaining arms carry constant resistances,
the third arm being variable. As the temperature of the
water varies the resistance of this coil also varies, so
that the temperature of the water is easily calculated
from the resistance readings taken.

Last year tests were made with this instrument on
the Royal Mail steamship Victorian and Canadian Gov-
ernment steamship Montcalm, and some extremely in-
teresting results were obtained about the temperature
conditions found in the immediate neighborhood of ice-
bergs. In every case as an iceberg was approached the
temperature increased almost uniformly to the extent of
about a degree over a five-mile circle surrounding the
iceberg. This rise in temperature was very marked on
the microthermometer, and occurred without exception
in every set of readings taken as the ship either ap-
proached or left a berg. Professor Barnes was satisfied
his instrument would detect the presence of icebergs
without fail. In view of the success of these experiments
it is evident that much added safety would result from
the general adoption by all steamships of the device.
We hope the present summer's work will still further
prove its practicability and utility in northern Canadian
waters.

"ETHICS OF ENGINEERING."

Faculties of Applied Science and Engineering
throughout the universities of the Dominion are now
holding examinations that presage the arrival of several
hundred young men after years of study and preparation
at the point where they are expected to become en-
gineers in reality and not merely in title. Under the
circumstances it is not inappropriate to consider some
of the problems of the ethics of the profession which all
engineers are bound to have thrust upon them.