

EGMONT RACING CLUB.

ACCEPTANCES.

FIRST HANDICAP HURDLES. Two miles and a distance.			
	st. lb.		st. lb.
Jenny	11 10	Takapau	9 7
Waterfall	11 5	Koromiko	9 0
Jacob	10 5	Satyr	9 0
Rere	10 5	The Peer	9 0

EGMONT HANDICAP. Two miles.

	st. lb.		st. lb.
Dudu	8 10	Foxton	7 6
Recluse	8 8	Weka	7 5
Lenore	7 10	Vendor	7 4
Patchwork	7 8	Orator	7 2
Antelope	7 8	Eileen	6 4
Leorina	7 8	La Petite Fille	6 3

HAWERA WELTER HANDICAP. One mile.

	st. lb.		st. lb.
Lenore	10 10	Orator	9 2
Montrose	10 0	Eileen	8 11
Cyclone	9 10	The Peer	8 10
Vendor	9 10	Fleta	8 7
Weka	9 7		

FLYING HANDICAP. 6 furlongs.

	st. lb.		st. lb.
Quadrant	9 0	Cyclone	7 8
Recluse	8 10	Weka	7 7
Boulanger	8 8	Jenny	7 4
Antelope	8 8	Eileen	6 12
St. Malo	8 2	Fleta	6 7

NOMINATIONS.

SAPLING STAKES.—Goodwood, Hermit, Fraternite, Cretonne, Rosefeldt, Fortune, Melas.

NURSERY HANDICAP.—Goodwood, Hermit, Fraternite, Cretonne, Rosefeldt, Fortune, Melas.

TRIAL STAKES.—Marechal Neil, Amina, The Peer.

FIRST HANDICAP HACK FLAT.—Viola II, Javelin, Architect, Torpedo, Link, Lodore, Kimberley, Minnie, Ishmael, Myrtle, Good Day, Tattler, Waltonia, Sirius, Despised, Strike, Durus, Merman, Daisy, Karewa, Rainbow, Waihi, Worth, The Orphan, Nganeko, Chance, Handmaid, Lady Gordon, Loch Leven.

SECOND HANDICAP HACK FLAT.—Ngaio, Waihi, The Orphan, Torpedo, Nganeko, Zareba, Minnie, Javelin, Worth, Sirius, Link, Lodore, Durus, Myrtle, Tattler, Waltonia, Jack the Lad, Despised, Strike, Kimberley, Ishmael.

FIRST HACK HURDLES.—Good Day, Ivy, Chance, Myrtle, Ergot, Aegone, Zareba, Pukaka, Jack the Lad, Whalebone, Loch Leven.

SECOND HACK HURDLES.—Good Day, Ivy, Chance, Ergot, Aegone, Zareba, Pukaka, Jack the Lad, Whalebone, Myrtle.

THE PRINCIPLE OF THE PHONOGRAPH.

How THE SOUND IS RECORDED.

In order to understand how the wonderful results attained by the Phonograph, which opens at the Opera House on Monday next under the management of Messrs. MacMahon, are produced, we must first glance for a few moments at what sound is, and how by such simple means as a piece of glass, a steel needle, and a cylinder of wax, which really represents the whole essential parts of the phonograph all kinds of sound can be recorded, preserved and reproduced at will.

First, sound consists of a series of wave-like movements of the air, analogous to the waves of the sea, but differing from them in one essential point, viz., that whereas in sea waves the water moves up and down, while the wave movement is propagated horizontally; in the case of sound the air moves backward and forward in the same direction as the wave is transmitted. The air is thus alternately compressed and rarefied, and as such conditions travel forward in all directions from the origin of the sound, though they become feebler as they spread, they are capable of transferring the sensation of sound from one place to another. When they meet an obstacle, such as a window or the drum of the ear, they cause it to move forwards and backwards as often as the region of compression or rarefaction meets it. The sensation of sound is produced in the human brain when such movements or waves follow one another not less than 16 times per second or more than 38,000 times per second.

A deep bass voice causes about 100 waves per second, while the highest soprano has reached about 2,000. If we again have recourse to the analogy of the sea waves, we shall find that, in addition to the large waves, there are often present numerous smaller waves, down to mere ripples, each system moving independently of the other, and giving to the outer surface or contour the most varied shape.

It is precisely the same with sound, and it is to the presence, number, size, and position of these smaller waves that is due that marvellous

difference that exists quite apart from pitch between the sounds emitted by a drum, an organ, a flute, a violin, a banjo, a piano, the human voice, and even between the voices of different persons.

The different elements of musical sound or speech are related to the air waves, producing them in the following manner:—

SOUND.	WAVE.
1 Pitch or Note	upon 1 Frequency.
2 Intensity or Loudness	2 Size.
3 Quality (by which we distinguish one sound from another).	3 Shape (which depends upon the number of smaller waves superposed on the large ones).

The human ear and the recording part of the Phonograph are very similar in construction. In the former the waves beat up against a membrane, and cause it to vibrate (1) a certain number of times per second, which registers the pitch; (2) a certain amount, which depends on the size of the wave, and which registers the loudness; (3) in a certain manner or shape, which registers the quality of the sound.

In the latter a thin plate of glass takes the place of the skin membrane. In the ear these movements cause certain bones to vibrate which are attached to nerve fibres, acting like bell ropes upon the brain.

In the Phonograph a sharp needle attached to the centre of the glass diaphragm or plate carves on a rotating cylinder of wax the number, size and shape of the air movements. So delicate is the machinery, and so fine the needle, that not only are the large waves carved on the wax, but even the minutest ripple, and it thus that the Phonograph is enabled to perform that wonderful feat of registering and preserving on a wax cylinder the complicated wave shapes which correspond to the vowels and consonants of human speech, as well as to those by which the same note differs when played on different musical instruments.

So far then for the recording of sound by the Phonograph and its prototype the human ear.

The season of this marvellous machine, just finished in the South, has been one of the most successful ever concluded throughout New Zealand.

THE PHONOGRAPH.

Under the direction of Messrs. MacMahon.

EDISON'S STARTLING TALKING MACHINE.

Messrs. MacMahon have much pleasure in announcing the First Exhibition in Auckland of Mr. Edison's Latest Phonograph, which will take place on

MONDAY NEXT, FEBRUARY 9,

AT THE OPERA HOUSE,

And will be continued for a short season of SIX NIGHTS ONLY.

Professor DOUGLAS ARCHIBALD, M.A., Oxon., will deliver an intensely interesting Lecture, and exhibit the incredible capabilities of Edison's Astounding Talking Machine.

Songs by famous artistes, speeches by Mr. W. E. Gladstone, Instrumental Music performed in Europe and America, will be actually reproduced with marvellous fidelity. The Phonograph is capable of reproducing the same voice from the same "record" many thousands of times. By this means human speech may be preserved for ever, and the voices of the living and the dead will mingle in futurity.

THE PHONOGRAPH, the most wonderful achievement of the ingenuity of man.

Popular Prices—3s, 2s, and 1s. Plan at Wildman's.

WM. A. JINKINS, Manager.

OPERA HOUSE.

Director Mr. Cunard.

WE WANT MIRTH!

WE REQUIRE AN ELEMENT TO MAKE US LAUGH!
WE ARE HERE FOR A SHORT SEASON.

That Season will be an Eventful One.

HARVEY BROS.'

MINSTREL & BURLESQUE COMPANY,

And the Clever Prima Donna

HELEN GORDON CUNARD.

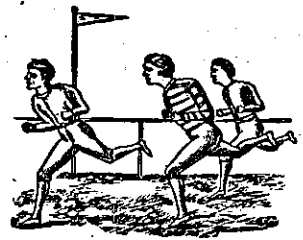
Our Performers are all Good. We commence

MONDAY, JANUARY 26.

WE ARE ALL STARS.

Ella Seigfried and Violet Brandon.
Harry Cowan and Vincent Magee
Carl Reidle and Arthur Fawcett.

CUNARD, THE ONLY ONE! and the Famous
BROTHERS HARVEY.



NEW ZEALAND

Amateur Athletic Association

AND

CYCLISTS' ALLIANCE.

FIRST COMBINED

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TO BE HELD IN THE

DOMAIN, AUCKLAND, NZ.,

ON

FRIDAY AND SATURDAY

FEBRUARY 6TH AND 7TH, 1891.

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Hon. Sec. N.Z.A.A.A., P.O. Box 96, Christchurch, N.Z.

P. G. WITHERS,

Hon. Sec. N.Z.C.A., P.O. Box 113, Christchurch, N.Z.

J. HALYDAY, JUN.,

Acting Assistant Hon. Sec.

WAR! WAR!! WAR!!!

MERCER REGATTA,

SATURDAY, 7TH MARCH, 1891.

CANOE HURDLE RACES ON THE NOBLE
WAIKATO RIVER.

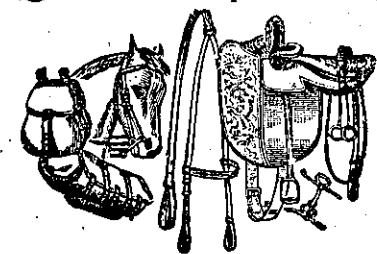
FUN FOR THOUSANDS.

Come and see the Mercer Regatta.

THOMAS PORTER, Hon. Sec.

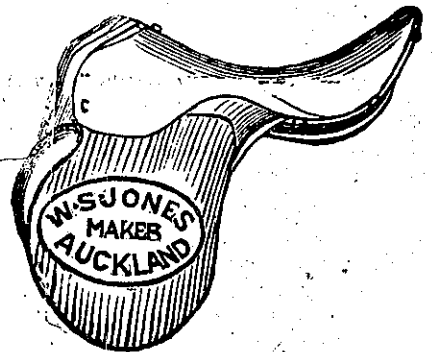
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Repairs a Speciality.



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