ART III.—On the fine Perception of Colours possessed by the ancient Maoris.

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In a paper which I had the honour of reading here before you last year, ("On a better Knowledge of the Maori Race," I alluded to the surprisingly powerful natural faculties of the Maoris; particularly instancing those of Memory, Sight, and Hearing; and ending my remarks in that place by saying,—"their fine discrimination of the various shades and hues of colours—particularly of blacks, browns, reds, greens, etc.,—was truly wonderful. On this subject and its relatives I hope to write a paper."* 

I should not, however, have chosen to do so at the present time, (for I had desired to finish a paper on "Hawaiki," which I had been preparing), had I not seen a paper by Mr. Stack, of Christchurch,—"On the Colour Sense of the Maoris,"† in which, according to my certain knowledge and long experience, there is no small amount of error; and believing this, though reluctant to suspend other work, I have deemed it to be my duty to lose no time in bringing my promised paper before you.

And here I would briefly remark, that what I shall now bring forward in this paper is from my own individual experience only; derived, not merely during an extra long period of dwelling among the Maoris, and that before the country became settled, (for others have resided in New Zealand as long, or even longer than I have), but mainly from my having travelled so very much among them; very frequently in parts where no white man had ever been before me; sometimes on the battle-field, both during and after the fight; and always in the additional capacity of a "doctor" or medical man, and ever on foot and with them; always having, also, several of their best head men (chiefs and priests) voluntarily and heartily travelling with me as companions from their own pa, or village, to the next pa, or halting place, or bounds of their tribe (as the case might be); and all this, too, at a period in their history when they had no extraneous foreign matters to trouble them or to talk about. And so I have had very many fine and profitable opportunities of hearing and observing many things that naturally and spontaneously occurred, which otherwise, probably, I should never have known; and which (as far as I know) no other European has ever had so many advantages and opportunities of knowing. Moreover, owing to Mr. Stack's paper, and to do the old Maoris justice, I shall have to relate many pleasing

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little confirmatory incidents,—more, in number, than I had originally intended to do,—as there is nothing like a concrete example for testing an abstract theory.

(1.)

Of their universal national taste concerning colour.

I have already slightly touched upon this in a former paper;* notwithstanding, I may again state, that the colours of black, white, red, and brown, were the prized and favourite ones,—the purer states especially of each of those colours were highly valued,—to which may also be added yellow and green. Those several colours, and their differing shades, comprised nearly all that pertained to their dresses and personal decorations, to their (principal) houses and canoes, and moveable property generally. Indeed, a chief's house, in the olden time, might truly be called a house "of many colours;" † which, within, were artistically and laboriously displayed. Of course, there were very many shades of each colour; as, for instance, of white,—from pure white (candidus) to whitish-brown; of yellow,—from bright yellow (gamboge, almost orange) to a faint tint of that colour; and of green,—in its many hues exhibited in the several varying specimens of

† In 1844 (on my coming hither to reside) the Maoris built several houses for me; one, in particular, as a library and study, in my garden, deserves a brief passing notice by way of an example. This one was to be built and finished in their best old style (omitting all carved work) without my interference; and, therefore, their skilled old tohungas were gathered together over the job from the interior and as far north as Poverty Bay. The building, composed of two rooms, was 10 feet high to the wall-plate. The frame-work and massy dubb'd pilasters were composed of dark old totara wood, which they laboriously dug up from the bed of the Tukiuki river, many miles away. It had three separate layers of raupo (Typha) in its sides, (besides the outer coating of a stiff and hard, yet fine, Restiaceous plant (Leptocarpus simplex). The raupo was first separated leaf by leaf, without breaking, and so carefully dried; but the panelling work between the pilasters (each panel being about 2 feet wide) was the curious part. First, the horizontal layers of narrow black and red bands, or laths, three of each colour, placed at regular distances; behind these was the close facing of selected yellow reeds (culms of Arundo conspicua) longitudinally and regularly placed; to these, and to a cylindrical black rod running down the whole length in front of the laths, the coloured laths were beautifully and elaborately laced by fine white, grey and yellow strips (excessively narrow, \( \frac{1}{4} \) to \( \frac{1}{8} \) of an inch wide) of kiekie, pingao, and harakeke leaves, each panel being also wrought in a different regular pattern of raised filagree work. For years this house was the wonder of all visitors (European and Maori): Bishop Selwyn often admired it, and so did Mr. (afterwards Sir) Donald McLean, on his first visiting Hawke's Bay as Government Land Commissioner, in 1851; indeed he told me he had never seen its equal; and he also gave orders for a similar one to be constructed for him at Port Ahuriri. This was also done; but it was but a poor imitation, as the skilled old builders were no longer here. In this latter house Mr. Domett, as Resident Magistrate and Crown Lands Commissioner, resided for several years. Mine stood over 25 years, when it was burnt down accidentally.
pounamu (jade), etc. Each tint or shade of colour bore its own peculiar name plainly and naturally, or figuratively, and sometimes both. Their love, or great desire, for the possession of those colours, is best shown in their zealous and heavy labours in seeking and obtaining them (infra).

(2.)

Of their fine general discrimination of the various shades and hues and tints of colours.

This, with me, was always a very pleasing subject. The bare present writing of what I have seen and heard serves to conjure up a host of pleasant reminiscences of the long past! indeed, I find it difficult to make a selection from many an interesting narration and discussion,—by night around our bivouac fires in the forest and in the wilderness; by day in travelling, and in resting, and (sometimes) when shut up for days together in their pas through rains and storms and swollen rivers. Foremost, here, I would mention their accurate description of a rainbow, of all its various colours, and of the difference between a bright and a faint one,—of the cause of its being so shown, and of its meaning, too (in their estimation),—and of the animated discussion that would sometimes arise upon it; not unfrequently proved by me to be correct (as to its colours) when a double rainbow appeared,—as then the colours were inverted. Their quick discernment of the iridescent hues of the feathers of a pigeon’s neck glancing in the sunshine, when snugly ensconced aloft among the foliage of a tall white pine tree; and their subsequent accurate description of them, and their comparison of those changing tints (as to colours) with the ever-varying nacreous ones of the mother-of-pearl of shells (particularly Haliotidae* and some Trochidae), and with the delicate evanescent hues of the bellies of several fishes when first caught,—as the mackerel, the scad, and the elephant-fish; and also with the prismatic bubbles and scum of coal-tar floating away on the calm surface of the tide,—which, on a few occasions, some of my own domestic travelling Maoris had early seen at the Bay of Islands. Also, when sitting, resting on the edge of a cliff near the sea, to note their observations on the changes in the colours of its surface caused

* Hence it was that the old Maoris devised and fitted out their admirable lure, made of a long cut and carved slip of the shell of the Haliotis iris, for sea-fishing with hook and line, particularly in the summer season for the kahawai (Arripis salar): when they paddled their little canoes, each manned by a single fisher, briskly through the water, with their line and lure towing astern. And here, I should further observe, that it was not every shell of the Haliotis that would serve the skilled Maori fisher’s purpose; no, he would turn over and examine a score or two until he had found one which, to his searching eye, gave the exact tint of colour he required. And just so it also was in their painfully selecting a bit of the same shell for the artificial eyes of their staffs, etc.—See “Trans. N.Z. Inst.,” Vol. XII, p. 77, note B.
by a passing cloud; and then to hear of how, in former days, the proper skilled scout* perched on a cliff would descry the approaching shoal of mackerel, or kahawai, or other annual summer fish, from the change in the colour of the sea, and would direct accordingly the takers with the big seine nets in their canoes.† From similar positions, too, we ourselves, when perched on the cliffy heights overlooking the deeply-embayed tidal arms and reaches of the sea,—whether at the Bay of Islands, on the many inlets and branches of the Kawakawa, Waikare, Waitangi, or Kerikeri rivers,—or at Rangaunu,—or at Whangaruru, or at Ngunguru,—or at Kaipara!—or at Whangarei, with its multitude of inlets, creeks and branches,—we ourselves have often received great benefits from their accurate sight, well-knowing, even from a distance, the precise state of the tide on those muddy flats and in those mouths of rivers below, and that solely from the hue of the water there; and, in so-doing we were often saved a considerable part of what was always a disagreeable job. For, in all those places, owing to there being no beaches, and the banks clothed with dense vegetation to the water's edge, with a belt, or thicket, of close-growing outlying mangroves, the usual rise and fall of the tide could not be seen.

Their quickness of vision also instantaneously and correctly detected what kind of fish it was that had fleetly passed us at sea, when out together in our boat or canoe, and that more from its peculiar colour, than from its form and manner of swimming. And so with their small fresh-water fishes, many of which closely resemble each other (including not only the various species, but, also, the differing varieties of those species, some of which also change their colours with age, as well as before and after the spawning season); these were all respectively known by their hues and mottlings, and each kind and variety bore its proper distinctive name. More than once, in my early travelling, has some kind Maori with me (either before or behind, in the long straggling single file), gathered a flowering branch of Solanum aviculare, and of Wahlenbergia gracilis, and of W. saxicola, and kept it for me; because his quick eye had noticed the change of colour in their flowers, from blue, and from lilac to white; which change in those two genera is not unfrequently the case: and not unfrequently was my attention loudly called to a large spider (of the species so very common and unpleasant in the open shrubby wilderness) whose main colouring and markings were different from others. Sometimes, also, in our journeyings, we should find a few large straw tail or wing feathers (generally one at a time), all more or less of a common brown colour, but with different light.

* "Huer," in Cornwall, on the pilchard seine-fishery; and done by the old Maoris, by signs, much as it is still practised there.
† See "Trans. N.Z. Inst.," Vol. XIII., p. 44, for an instance.
or dark markings; these would be collected and preserved, and talked over, and decided by the older men to belong to the parrot, sparrow-hawk, common hawk, long-tailed cuckoo, wood-hen, bittern, etc., etc. And here I may mention (as being probably but little known), that each separate feather (primaries) of the wing, and also of the tail, bore its own distinct and proper name. Distant trees, whether standing alone, or in clumps and thickets, or growing with others in the forests, were also accurately known by their colour—their peculiar and specific hue of green. So were distant plains, and marshes, and open hills of a country wholly unknown to us; which, sometimes, lay before us, stretching out some miles away! Such would be sure to form an interesting theme to all of us; particularly to my Māori companions, who (poor fellows) always had to traverse those unknown and trackless wilds,—hills, plains, and marshes,—with bare feet and legs; not to mention our often not knowing where sunset would find us travelling, and so compel us to halt for the night. From their general hues alone the Māoris could accurately tell whether those far-off unknown places were covered with a vegetation of fern or flax,—dwarf kahikatoa or mangrove,—tātoos or raupo,—wīwī (species) or toetoeupokotangata,—or, if of grasses, whether patīs or raumoa.

A remarkable instance of their detection of a change of colour in the distant and unknown landscape, I may briefly relate,—especially as it completely bothered us all at first sight! It happened in 1845, when I first visited the South Taupo country from Hawke's Bay. On this occasion we were without a guide; we had advanced some way into the interior, and had just sighted the high open lands of Tararuau, when the strange general hue of their vegetation bearing a slightly reddish cast immediately attracted our attention. That country was then wholly unknown to all of us, and so was its vegetation; moreover, it was trackless. Among my party were some Māoris who had travelled much with me throughout the island, but we had never before noticed anything like that. Some of the party said one thing, and some another, and there was a long and earnest discussion carried on, while we were slowly journeying thither, as to what it could possibly be. Arriving there we found the reddish colour to be caused by a low red sedgy Cyperaceous plant, with long narrow grass-like leaves, a species of Uncinia, which gave the prevailing reddish hue to the vegetation round about.


* In sending specimens of this plant to England, I had named it U. rubra; which Boott, in describing it, also adopted. I see that Dr. Sir J. Hooker (in the Hand-book of the New Zealand Flora), speaks of it as being "red," and, also, "red-brown when dry;" but it is much more red when living.
Transactions.—Miscellaneous.

But, far above all, their fine discrimination of delicate hues and shades was most clearly shown in their nice distinction of the various tints of the flesh of the several kinds of kumara and of taro when cooked; also, of the varieties (in colour) of the koroi berry (fruit of the kahikatea—white pine tree), and of the karaka berry (Corynocarpus laricifolia) in their stages of ripening; and of the several shades and hues of their dressed flax during the drying and bleaching process; for all of which colours, or fine shades of colour, they had distinctive names. And here I may relate a notable incident which once happened; it pleasingly surprised me at the time, and often since on recollection. I was travelling, as usual, in 1845, on the coast, and was staying at Mataikona, near Castle Point, then a populous village. In talking with one of the oldest chiefs of the place about the taro plant, and its varieties, he said that he had long ago seen and cultivated the sort called Wairuaaramagi,* but that it had long been lost to them. Now I had also known that peculiar sort when residing at the north, and I had more than once noticed the delicate and curious pinkish hue of its flesh, so different to the other sorts; and wishing to test my old friend's knowledge, I inquired particularly of him its colour, and his answer was a beautiful one, so clearly expressive; he replied,—"I tu-a-kowhehowhero tona kiko." A phrase exceedingly difficult to render as briefly into English; but meaning, that its flesh had a pinkish appearance.†

(3.)

Of their names for colours, and their various shades.

Here I would first observe:—

(1.) That, according to the genius of their expressive language, many common nouns are as largely used for indicating a single species, or peculiar

* See "Trans. N.Z. Inst.," Vol. XIII., p. 36.

† Wairuaaramagi—the proper name of this variety of taro is so highly expressive (like most special names among the old Maoris) that I am tempted to give its full meaning, and to offer a few words upon it. Wairuaaramagi, lit. Reflection-from-(the)-sky: meaning, the light reddish-pink tint, as sometimes thrown of an evening over the features of the eastern landscape, from a glowing sunset; also, the more distant, faint, reddish hues of the rare ends of an aurora australis. This colour (as I have sometimes seen it of a summer's evening), when cast on or reflected back from white cliffs or mountain snow, or from an extensive flat filled with the dead feathery panicles and culms of the large cutting-grass (Arundo conspicua), is exceedingly like that of the pink flesh of that peculiar variety of taro; and its poetical beauty, as well as its truthfulness, is still further enhanced when we think (as the old Maoris did) of that beautiful colour as emanating from a Personage, (the Sky), and their great, first, and common Father.

I have before had occasion to observe that, with the old Maoris, the name of a thing meant a great deal—very much more, concerning its qualities, uses, etc., etc.—than we at best can possibly suppose. Hence, too, the incessant demand from them in the early days, on seeing any new thing, whether vegetable or animal, especially if living, of—"the name?" "the name?"
individual of a family,* as they are for a stirps, family, or genus; and commonly so by way of laconism, ellipsis, abbreviation, or carelessness; always, however, perfectly well understood among themselves. Hence, owing to this common usage, appellatives and proper names become gradually dropped, and fall into abeyance; though, as the Maoris formerly were, never wholly forgotten.

(2.) That being a truly natural observant race, and fully acquainted with nature, they often, or generally, used her peculiar productions and appearances to express colour, or the exact hue of colour required;—there was no mistake here, among themselves. For in the highest minds a single descriptive word, or sign, is sufficient to evoke crowds of shadowy associations.

(3.) That from the particular shade of colour of a thing, they often gave to other and very opposite things their names,† as in the foregoing example of the pink-fleshed *taro*.

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* Harakeke—flax, (of which they have more than 50 sorts, or varieties, every one bearing its distinct and proper name).
  Ika—fish, (nearly all fishes; each, however, has its own proper name).
  Kai—food, (also, all articles of food; though each one has its own proper name).
  Kahu—a garment, (all garments, of which they had a great and varied number, all bearing proper names).
  Kowhatu—a stone, (all stones, etc).
  Hua—fruit, (of plant, tree, bird (egg), fish (roe), etc).
  Baka—a tree, (of all trees; yet each one has its own proper name, and some several names for various parts of the same tree, which are often given for the colour).
  Pipi—a bivalve shell-fish, (and generally for all salt-water bivalves; each one, however, has it own distinct name).
  Pupu— a univalve shell-fish, (ditto).
  Kumara—sweet potato, (yet many sorts, all bearing proper names).

† Of which a few instances are here given by way of example:—
  Paua, the black flesh of the Haliothis; also, a black sunburnt potato.
  Mangu, mananau, and mangumangu, black (colour); also, ink, blacking, etc.
  Tawatawa, the mackerel, and tamure, the snapper fish; also, a peculiar appearance of the sky from cirrus and cirro-cumulus clouds, through which the blue appears something like the deep blue wavy marks on the back of a mackerel freshly caught (this term of mackerel-sky, is also given to it by Europeans); also, resembling the dark wavy lines on the flesh of a fresh snapper under its skin when cooked.
  Teroiramahoe, the white-skinned root of the mahoe tree (Melicytus ramiflorus); also, a variety of whitish skinned *kumara* of exactly the same shade of colour.
  Pokere kaahu, a dark purple variety of *kumara*;—from pokere, the dark purple flesh of the fruit of the tawa tree (Neosaphne tawa), and ka ahu, to proceed towards; to grow up to; to become like to.
  Parakaraaka, the orange-red colour of the fully ripe karaka fruit; also, a light reddish-orange variety of *kumara*. [N.B. This variety of *kumara* has ever been believed
(4.) That their principal proper terms for colours were often compounded ingeniously and beautifully, in accordance with the expression and idiom of their language:—

(a.) By reduplication, and by half doubling:

(b.) By adding qualifying adjectival terms for intensifying or lessening; the power of which was further heightened or lowered according to their position:

(c.) By the aid of several apt particles of different degrees:

(d.) By other expressions also adjoined, of admiration, or depreciation. (See Paradigm, Appendix I.)

5. That certain colours took their own proper intensitives, etc., which could not be used with other colours.

(4.)

Of their great labour, patience, thoughtfulness, and skill, exhibited in their seeking after and obtaining the various shades of colours; often labouring to a nicety to procure them.

Hence (after many trials) they had succeeded in getting their brilliant black and red dyes; the former, in particular, being often envied by their early discoverers and visitors and their several European peoples. And here (as I have formerly observed when treating on another subject), we

by me to be the identical sort seen and obtained by Cook and his companions, and wellnamed by them chrysorrhizus.]

Pohutukawa, a tree (Metrosideros tomentosa) having reddish wood; also a variety of kumara with reddish flesh of just the same shade of colour.

Wero, red (colour); also the restum protruding, etc.

Kumu, the anus; whakakumu a red variety of kumara; kemukumu, the red-backed gurnard (Trigla kumu).

Waewae-keroru (pigeons’ feet), and waewae-torea (oyster-catchers’ feet), which are always red; also given to infants when wearing red shoes or socks.

Korau, the white edible pith of the black fern-tree; also, the large white root of a species of Brassica, formerly largely eaten by the Maoris.

Kahariki, bright green colour; also, the small green parrots; the green lizards; water melons, etc.

Kawakawa, the Piper excelsum shrub; with glaucous green leaves; also, a particular variety of jade-stone, having just the same hue of green.

Poumanu, the green jade-stone (general name); also, a common green glass bottle, and (with the Ngapuhi tribe) a peculiar potato, planted in February and ripe in May: (infra, § 6).

Watikura, the reddish stagnant water of some sluggish water courses and pools, arising from a deposit of protoxide of iron; also, rust on iron tools, etc.

Waro, charcoal; also, mineral coals; a very dark cave; a black abyss.

Pukapuka, the shrub with large leaves, white underneath, (Brachyglottis repanda); also, a book; white paper, etc.
must never lose sight of this great, this astonishing fact, namely, that the ancient Maoris knew not of the use of iron nor of any metal, neither had they any vessel which would stand fire!

Nevertheless they knew that by a second or even a third process, as well as by the application of heat in dyeing, they should increase the depth of the colour sought. To me it was really a wonderful sight to see a woman patiently engaged in her work of this kind; (take an instance)—with nothing better at very best than a large paua shell (Haliotis iris), with its natural holes artificially stopped up, as a vessel to hold her dye-liquid (red-brown) and the article to be dyed, but only a very small quantity at a time of yarns of flax (Phormium) scraped and beaten and carefully prepared,—this shell with its contents was warily placed on hot embers to raise it to boiling heat, and to keep it so, and there long and carefully watched and tended, and the few yarns in it taken out and repeatedly tried, until the proper shade of colour sought was obtained: which done, the operation had to be frequently carried out until a sufficient quantity of threads were died. Such always served to remind me of what we are told by Pliny* and others, respecting the tedious process followed by the women of Tyre in obtaining the famed Tyrian purple dye from the murex shell-fish,—“a tiny drop from each living fish!”

(5.)

Of their light colours.

These were various, and were both natural and artificial.

The natural ones were several; namely, of pure white,—the snow, the clouds, and the surf; the large white-leaved pukapuka shrub (Brachyglossis repanda), and the peculiar white-fronded fern-tree (Cycadus dealbata); and, strange to say, such out-of-the-way recondite objects as the white milky sap of the plant Euphorbia glauca, and the white meat (flesh) of the tail of the crayfish when cooked, and, also, the whiteness of living human teeth (all these I have heard used by way of naming, or of comparison); the plumes of the white heron, and of the gannet; the small downy feathers of the albatross, and of several gulls and terns; also, of another shade of white, the very thin and delicate epidermis of the long leaves of the tikumu plant (Celmisia mackaute), and the prized long hair of the tails, and also the skins, of their little white dogs. Of yellows, the long flowering reeds, or culms (kakaho), of the toetoe plant (Arundo conspicua); and the harsh leaves of the gamboge-coloured pingao (Demoschænum spiralis).

The artificial ones were also many, and were obtained in various ways, mostly by washing and beating, and by bleaching; namely, their dressed flax fibre and yarns for weaving their mats, and for twisting into cords,

* Pliny, Nat. Hist., lib. ix., c. 60-63.
lines, and threads, of almost all light hues,—from that of a light fawn, and
a whitish-brown, to a dirty or dull white; their selected flax strips, tassels,
and fringes, with the yellow epidermis unbroken save at regular distances;
the narrow bleached strips of the leaves of the kiekie plant (*Freylinetia
banksii*); the bleached inner bark of the celebrated aute (paper mulberry),
and also, the inner bark of the little autetaranga shrub (*Pimelea arenaria*).

And so particular were they (at times), that I have known them to
patiently undo their panels of laced-up reed-work, after having laboriously
fixed them up in their places in the chiefs' houses, merely to take out a
stained reed or two which did not harmonize in colour with the adjoining
ones;—though this portion of that work (i.e., the proper selection of the
reeds) was usually done by going over them one by one, and by joining
them telescope-fashion, before they were carried off to be fixed in their
proper places. And just so the women, in the weaving of their best dress
mats (one of which always took a long time, often over 2–3 years), they
strove hard to have the bleached yarns of flax in the body of the fine
garment, though prepared at different times and seasons, all of one hue of
colour throughout; often while weaving it rejecting a yarn or strand on
account of a slight difference in the colour. Indeed, so sharp were their
well-trained eyes at this work, that they could distinguish a difference in
the shade or hue of the flax-yarns and threads when I could not.

Two little incidents, illustrating their high powers of discerning the light
shades of colours, may here be mentioned. (1.) Nearly 50 years ago, when
some of the Maoris had learned to write, and paper for that purpose was in
high request, they preferred the white or cream-coloured paper to the foolscap
writing paper having a light cast of blue, though the Mission annual supply
of writing paper was composed of this latter sort, and it was stouter and
stronger and better fitted for their use. (2.) When the first canaries were
introduced into New Zealand, and the few Maoris who had seen them in the
Bay of Islands were describing them to their friends who had not seen them,
and some said the colour of the new bird was that of the *kowhai* flowers
(*Edwardsia grandiflora*), others corrected them by saying, "No; not so;
rather that of the paler *whanariki*" (sulphur), with which, in its pure
native state, they were well acquainted.

The beautiful natural light colours of the bellies of several living fishes
—silvery, dead white, slightly iridescent, and with a faint tinge of blue,—
were also much noticed and remarked on; and so were the light colours,
internal and external, of several shells; insomuch that not a few of them
had early passed into their proverbs and songs.† Hence, too, they were

quick at detecting any light coloured variation in the plumage of birds, (well-knowing the few genera that sometimes produced albinos), and in the foliage, and fruits, and wood of plants, as well as in shells; all such, and every variety of colour, bore its own proper name.

A little botanical incident bearing on this subject may be briefly told:—
On one of Mr. A. Cunningham’s visits to New Zealand, he went to the kauri forests botanizing. While there he heard from his intelligent Maori companions of two kinds of kauri known to them, but only by the difference in their names, arising from the variety in colour of their timber. This set him on the search after the new Dammara pine, No. 2! but after much toil and enquiry, and the obtaining of a quantity of foliage specimens, he gave it up, concluding that such slight difference in colour (which did exist) might arise from the soil, or situation, or from the varying specimens of timber having been cut from both the sunny and the shady sides of the same tree; this latter opinion, however, the Maoris (and the few European sawyers then at work among them) always denied. It was one of my dear friend’s last bequests to me to follow that enquiry up; but, like himself, I never could make anything of it. There is, however, a difference in the colour of some of the kauri timber, exclusive of the prized “mottled” kind, for which the old Maoris had, as usual, their own proper distinctive names.

(6.)

Of their dark and sombre colours, not black.

Of natural ones, they distinguished at a distance the heavy dark-green of the clumps or thickets of some trees, such as karaka, matai, etc., and correctly named them: also, of their dark-coloured, edible fruits, when ripening, high up on their topmost branches, as of the matai pine (*Podocarpus spicata*), — so as to save themselves the trouble of a high, dangerous, and always disagreeable climbing, to examine them. The peculiar black-blue colour of the sky on certain nights, dependent on the state of the atmosphere; also its colour at various times of the night; and particularly the two dark pear-shaped spaces in the Milky Way, near Centaurus and the Southern Cross (called Coal-sacks by the early navigators); also of the ever-varying storm-clouds, for which they had more than 40 names; and the dark colour of the sea, in calm weather, over rocky shoals, and in deep holes off the coast; the slight shades of difference between the colours of their own dark hair; the difference between the colours of several dark-plumaged birds closely allied, as of various shags and gulls, and also of some forest birds; the difference between the varying blue-black and brown-black colours of the backs of several of the larger sea-fishes and of eels; and were particularly knowing in the matter of dark-green* coloured “sun-burnt” potatoes, some

* See note § 3, clause 3, supra; hence that name.
kinds or intensities of which they preferred for seed. They knew at sight
the difference in the colour of blood recently and some time shed; and, also,
from the hue of the rich purple juice of the fruit of the *tutu* shrub, (when
hospitably set before them in open calabashes in travelling in the summer
season), they perceived at a glance whether it was freshly made (when it was
highly esteemed), or whether it had stood a day or two; and they accurately
determined the age of severe bruises on the human body from the difference
in their colour. From a great distance off they knew what was burning
by the colour of its smoke, whether arising from dry or green fuel, whether
from swamp, or plain, or forest vegetation; and they also knew from the
colour of soot what it had been obtained from:—this last was formerly a
matter of great importance to them in the business of tattooing.

Of colours of this class artificially produced were the dark-red dyes of
various shades obtained from the bark of the *tanekaha* (and *toatoa*) tree
(*Phyllocladus trichomanoides*), used in dyeing yarns for the decorated borders
of their best flax garments, and in staining their superior furniture, walking-
sticks, etc., etc.

(7.)

*Of their black colours.*

Of all their artificial colours, black was the one which they knew how to
make and impart to perfection. This colour they had naturally around
them,—in the mineral, the vegetable and the animal kingdoms; in the first
in coal, and in the black oxide of manganese, and in many species of rocks,
as in obsidian and basalt; in vegetables in the common Fungi of the
forest,—as *Antennaria*, *Campion*, etc., which sometimes completely covers
the trunk of a large tree, and gave rise to strange tales and fancies; and
in the animal kingdom, in the plumage of some birds,—as of the *taiti*, the
tieke, the *hua*, the *torea*, the *kawau*, and the back of the *pukoko*; in the
flesh of the shell-fish *paua*, and of the *rori*; and in the black internal skin
(lining mouth and abdomen) of several fishes,—as the mackerel, herring, mullet, etc.

In their own peculiar artificial dyes of black, of various shades of inten-
sity, used for dyeing garments, etc., they have never been surpassed; some
of their black dyes being strikingly deep, pure, brilliant, and lasting. All
their earlier European visitors were astonished at the intensity of this
colour used as a dye among them. For dyeing black their flax threads
yarns and garments, dressed and undressed, and also their whole big
garments (thick cloaks) made of the fibres of the *toit* (*Cordyline indivisa*),
they generally used (as is now well-known) the barks of two closely allied
trees, *hinau* and *pokaka* (*Elaeocarpus dentatus*, and *E. hookerianus*), with a
mordant composed of aluminous clay; they also used the bark of the
tutu shrub (Coriaria ruscifolia) to obtain a blue-black, which was sometimes used for fancy and ornamental work,—as in weaving graceful little baskets, etc., for a first-born or beloved child,—it had a very peculiar hue; and for the purpose of body-tattooing they used various kinds of charcoal, both animal and vegetable, obtained from several peculiar sources, and manufactured in a highly curious manner with much labour and skill. For colouring black their narrow and thin wooden slips, or carefully prepared laths of totara wood,—with which they plentifully ornamented the interior panels on the walls of their chiefs’ houses, in order to set off to advantage the white and yellow filagree work interlaced thereon to regular patterns, as well as the lighter yellow reeds beneath,—they passed the laths one by one repeatedly and quickly through a fire, partly charring the outside, until they had made them of the proper hue; this done the slips were well rubbed and made quite clean and glossy, and fixed in their places.

(8.)

Of their sober neutral colours neither dark nor light.

These, composed of various shades and of nearly all colours, they knew well, both naturally and artificially. It was in this particular portion of their discriminating knowledge of the shades of colours, that I early felt the more deeply interested, and often indeed proved their correct descriptions of them, with no small degree of astonishment; for by it I was not unfrequently led, in my early botanizing, to note down and to obtain some new plants or varieties of plants. Even while writing this, I well recollect their statements to me (40 years ago and more), concerning certain plants,—as various species of rushes and of sedges, of scented Hepaticæ, of river Conferva, and of sea-weeds, and particularly of a Chara, and of a curiously-coloured species of Conferva (possessing a steel-blue cast of colour), which I was led to seek in out-of-the-way holes, through casually hearing from an old woman of their different shades of colour. Hence, too, they discriminated between the different sorts of kumara, and of taro, when the plants were young and growing, by the hue of their leaves (and also of the various kinds of potato), and that when travelling along by the plantations, outside of the fence. Also, the varieties of New Zealand flax (Phormium), more than fifty in number, were detected by the hue of their leaves,—all being alike green, yet all slightly differing in the shade of that colour, and only three or four of them (at most) in the shape and size of their leaves. I have sometimes been amused, when travelling, in hearing the descriptive remarks (among others) which would arise from my party, on the baskets of cooked potatoes being placed before them, kindly yet hurriedly boiled on their arrival at a village. On the top of each basket, according to custom, was placed a handful of boiled greens (of sow-thistle tops, or of wild cabbage-sprouts), of such as
were at hand; and the remarks would arise simply from the difference in the colour of the greens,—some being well-done, and some (hurriedly) half-done; some freshly gathered, and some stale; the food having been quickly cooked for them by two or three different persons; the little baskets severally brought in; and, according to etiquette, none touched until all were in and placed (as, indeed, with us). It was owing to this finely-developed faculty that they knew so well, and from a distance, whether the annual summer luxuries obtained from the female flowers of the kiekie plant, and from the pollen of the raupo, were in season, and ready for collecting or not,—through the slight change in the green of the tips of their leaves,—and so saved themselves the labour of climbing, etc., purposely to ascertain.

And here I may mention another little botanical incident, which indeed not unfrequently occurred in our deep forest travelling. And to those present who may have travelled through, or even only entered into, an uncleared standing New Zealand forest in all its pristine glory, such a relation may almost seem marvellous. In those umbrageous forests the large trees are generally completely covered with all manner of plants growing thickly on their trunks and branches, as freely, or even more so, than if on the ground beneath. And there, sometimes, nestling among them, yet far away, high up, would be a rare fern or Lygodium, or some small epiphytical shrub, as Pittosporum cornifolium, or a Loranthus, or a Viscum, or a still smaller plant of Peperomia; and yet all those (and many more) were severally made known to us below by their slight difference in hue; and so, through the quick and fine discernment of my Maori friends, I sometimes gained some desirable specimens. The obtaining of one such I would more particularly relate, as it is an excellent example of what I have just mentioned, and one never to be forgotten by me. It was my discovery (at the north, in 1841), of that rare pine, manoao (Dacrydium colensoi, Hook.). I had heard of it from the old Maoris, but none had seen one for several years, as they grew singly in the dense forests, and the young Maoris did not even know it! On one occasion, however, when travelling through the trackless forest near the coast between the Bay of Islands and Whangarei, we (or rather one elderly Maori then with me) kept a look-out for it. Now this "pine," in its foliage, etc., closely resembled some others of the class,—as the kahikatea, the rimu, etc.,—especially when at the distance of the top of a high tree, but the keen eye of the old Maori detected it at last (though I, and the other younger Maoris with me, could not make out any difference, owing to the distance). And then, for my pocket-knife, he undertook the ugly job of climbing the tree, and breaking off a branch for me. In this case it was more the peculiar shade of green of the foliage, though distant, than anything else
that distinguished the tree in his sight; the fruit of this species being very small and concealed, and not at all showy. Specimens from that branch I subsequently sent to Sir W. J. Hooker, and they were described by him with a drawing.*

It always seemed (to me) as if the old Maoris had a peculiar natural inclination, or bias, towards what I have called neutral colours. This, I thought, was shown,—(1.) in their sometimes choosing to line their large public reception houses with the small, light-brown, narrow stalks of the common fern (*Pteris esculenta*), all cut to one length, and placed horizontally and closely, and built up, or interlaced together, in separate panels between the pilasters of the building, with a very great deal of care and trouble:—(2.) again, in their sometimes preferring to line the roofs of their dwelling-houses and *kumara*-stores (*i.e.* the first layer of thatch placed upon the white rafters), with the large green fronds of the *nikau* palm (*Areca sapida*), which were regularly placed on while fresh, and their long narrow pinnate leaflets neatly interlaced; these, which were green at first, soon became of a uniform dark-brown colour on drying, serving remarkably well to set off to advantage the light-coloured rafters of *kauri*, or of *tawa* wood. This manner of roofing, chiefly obtained at the north, among the Ngapuhi tribe, where the *totara* timber was not so common as at the south:—(3.) in their dingy-looking *kiwi*-feather cloaks, and in their common, slightly-coloured, (dyed) flaxen ones:—(4.) in the brown parrot, and dark pigeon plumes, used largely for their war-canoes:—(5.) in the women wearing around their necks little satchets composed of the finely-mottled neutral plumage of the *hio* duck (*Hymenolaimus malacocephalus*), and of the elegantly flecked, or pencilled, back plumage of the male *putangitangi* or paradise duck (*Cassarca variegata*):—and (6) in their, sometimes, only lightly dyeing their prepared strips of undressed flax for their fancy baskets, so as to become of a dark dove, or drab, or even a light slate-colour; and then, in weaving them, to form many kinds of regular chequered patterns, by ingeniously turning sides to the said strips in the weaving; giving the whole, when finished, somewhat of a damasked, or mosaic, appearance, owing to the difference of the reflection in the hues of the one colour, arising from the more glossy upper skin of the flax-leaf regularly interwoven contrasted with the duller appearance of the under and slightly scraped surface of the same; hence, too, it was, that the skilled old lady-weavers were always mightily pleased with the in-woven damasked pattern of a common unbleached linen table-cloth:—and, also, (7) in their pleasingly weaving together the undressed leaves of widely different fibrous plants,—as of New Zealand flax (*Phormium*), of

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Astelia (sp.), of kiekie, and of pingao,—collected from opposite and distant habitats;—some from the deep forests (climbing the highest trees), some from sandy dunes and sea shores, some from cliffs, and some from marshes; and all torn into regular-sized shreds, and dried, and woven in various patterns, into one basket! often causing it to possess a very agreeable appearance from the various hues of colour; though, sometimes, the difference in the colour of some of the strands obtained from various plants was so slight as not to be readily distinguished at first sight by the eye of a stranger,—not without inclining the basket at its proper angle towards the light so as to reflect it.

(9.)

Of their striking, contrast, and gaudy colours.

These, though various and often contrary, yet not many in number, I have taken together; and that because they may all (as formerly used by the old Maoris) be well included under the one term of striking; i.e., immediately catching the eye and arresting attention.

And here their red colour, in its various shades of richness and depth, must take a first place. In nature around them, they saw plenty of a red colour,—in the rainbow, and in the gorgeous hues of the clouds at sunset; in some of their birds,—as in the red hawks and feet of the pigeon, the oyster-catcher, and the blue swamp-hen, and in the red feathers of the large parrot, and on the heads of the two species of parrakeet; in their fish,—as the red gurnard, the snapper, and the crayfish; in many of their seaweeds; and in the flowers and small fruits of several trees and shrubs. All those reds differed in hue, etc., from carmine to vermilion, and from bright light- to dull dark-red.

Red, as already observed, was one of their national colours; yet, its use was, in a measure, limited; and this, I think, is to be attributed to its having been originally deemed a sacred (tapu) colour; which, in connection with their cosmogony, very likely first arose from observing the brightest colour of the rainbow (also a personage), and of the heavens at sunset, and sometimes preceding sunrise. They used this colour in its mineral state only extensively and commonly for their war-canoes, their chiefs’ private and their village big reception-houses, their kumara storehouses and the large carved images on the outer fences of their pas (towns and forts), for their grave fences and monuments, and for their boundary and other raised cut commemoration posts: all of which were more or less public and superior matters. This mineral colour was also used, both by male and female chiefs, for ornamenting or staining their persons, and also their clothing mats, especially on great public occasions and times of ceremony. To obtain this mineral red colour cost them much patient labour and no
small amount of skill in its preparation; as all the several varieties of it were only found deposited in very small quantities, whether in the still and slow-running waters, or in the earth; or deposited as minute crystals and rust-like dust between small layers of shale in some dry cliffs. To relate the several long and tedious processes of collecting, roasting, or baking, etc., etc., though highly interesting, would take up many pages. And this toil was not unfrequently increased through their not at first obtaining the true shade of red they wished for, hence they patiently repeated their work. Those various hues of red colour all bore different names; the brightest and purest was very highly prized. Notwithstanding, they never adorned their hair with red flowers, or with red feathers* from their birds; these latter (obtained from the abdomen and under the wings of the big parrot), were used by them to decorate the heads of their staffs of state (hani and taiaha), for which purpose they were neatly woven into, or stitched on to, a bit of flaxen cloth woven expressly for that purpose.

And here it may be remarked, that on the early coming to New Zealand of Europeans (before the establishment of the colony), and their trading with the Maoris, they did not care to select red wares, save in the matter of red worsted cravats, and red sealing-wax; the former they generally unravelled to weave it into the borders, etc., of their best flax clothing-mats, and the latter they used as a base for the fang of the shark’s white tooth which the chiefs usually wore suspended in their ears; and, also, further to ornament the four mother-of-pearl eyes of their carved staffs of state (supra). Subsequently, however, when red articles of clothing both woollen and cotton were brought for sale, and (for a time) became more eagerly sought after, the Maoris could not be deceived with the cheaper common dull red handkerchiefs, though stouter in quality, instead of the brighter Turkey-red ones.

* This was the common custom among all the tribes; yet a legendary incident showing the very opposite, may be briefly noticed; particularly as a proverbial saying of some power and often in use is said to be founded on it. On one of their famed “canoes” from “Hawaiki” reaching the shores of New Zealand, the chiefs on board saw the littoral pohutukawa tree (Metroxylon tomentosum) bearing a profusion of red blossoms; then one of them named Tauminihi flung his own red (feather) head-ornaments into the sea, in order to re-decorate his hair with those beautiful red things before him, saying, “Those on land were far better!” but, on gathering them, they fell to pieces, and he discovered them to be only mere flowers! and was, consequently, much chagrined. After this, his cast-away red head-dress was washed on shore at a place near by, and found by another person named Mahina; who, on Tauminihi seeking to recover it from him, refused to give it up, saying, that it was a waif washed on shore and found by Mahina; which saying also settled the matter. This sentence became a proverb, and was always used by a Maori on finding anything; and through his so doing, the claim to retain it was usually allowed. No doubt there is a far deeper meaning in this ancient story than what appears on its surface.
It was owing to their quick and correct perception of the several hues of red that they often saved themselves from loss and disaster, and from much extra and dangerous labour. As, for instance, in their knowing from the peculiar red of the clouds and sky before sunrise of the coming change in the weather, and so postponed their deep-sea fishing, or voyage by sea, and sometimes their journey also by land; as they always commenced their expeditions very early in the morning; and, just so, again, at sunset, they knew by the red hue of the clouds, etc., what weather was at hand, and if stormy, then they drew up their canoes, and collected their nets, and arranged their matters accordingly. Indeed, a whole paper might be written on their descriptive powers and opinions concerning the colours of the clouds, their changes, and their portents, and the speedy alterations in the approaching wind and weather (exclusive of their many superstitious notions), of all which they had evidently made a long natural and useful study, in which their remarkably tenacious memory assisted them greatly; every variety in colour (as well as of form, though in a much less degree), was critically scanned, and bore its own proper name. For my part, I confess, I never could learn those nice differences; though I had always found the old Maoris to be correct in their weather prognostications. Also, in the climbing of the high white pine (kahikatea), totara and rimu trees in the forests, to obtain their fruit (a work always attended with more or less of danger), for they readily discerned from below whether the fruits were quite ripe, though very small, from their shade of red colour; and so with the karaka, poroporo, kawakawa, rohutu, kohia, and other fruits, which are orange-coloured when fully ripe. This last, being a high-climber, was only found bearing fruit on the tops of their highest trees; from its seeds they obtained one of their choicest anointing oils. And here, in speaking of orange-colours, I may also mention the discussions I have known among the old Maoris relative to the proper hue or colour of the wattles of some of their birds (e.g. the huia, and the kokako), which led me to believe that their wattles varied in the intensity of their colour owing to the season of the year, or that those of the male birds were of a different shade of orange from those of the females.

The various sorts of the red-skinned kumara tubers,—light-red, dark-red, purple-red, reddish, etc.—were also all well-known and accurately distinguished. Their experienced eye also saw, at a glance, the difference in the two shades of red exhibited in the flower and the fruit of the puriri tree (Vitex littoralis), and accurately described them. And the planet Mars

* See, "Trans. N.Z. Inst.," Vol. XIII., p. 34.
was also distinguished by the old Maoris from the other planets and stars by its redness. Hence, too, they very quickly detected the alteration in the colour of the face and of the eyes,* arising from bashfulness, apprehensiveness, or shame, or from concealed vexation or open anger; and not unfrequently plainly told the actor or sufferer of it† to his, or her, further vexation and discomfiture.

Blue was another colour which the women and young men sometimes used with striking effect for ornamenting their faces, necks, and arms; this colour they obtained from two sources, one mineral and one vegetable, but it was very scarce. The mineral, in the state of a fine clay or powder, was but rarely found at the north, and then by chance, in some cold swampy grounds having a clay subsoil, and there only occasionally, adhering in small quantities to the roots of some cypressaceous plants; when pure it was of a most beautiful hue of blue (ultramarine); the only indigenous natural productions known to me at all resembling it in colour, were the lovely blue berry of Dianella intermedia (when in perfection); the blue tints of a living Medusa (Physalia pelagica?—“Portuguese-man-of-war”) often found on our outer sandy beaches in the summer season; and a portion of the blue plumage of the kingfisher; this colour was a still more brilliant blue than the breast of the swamp hen (Porphyrio). In the early summer season the youths of both sexes ornamented their faces with the light-blue pollen of the Fuchsia flowers,—much, indeed, as they also did with the orange pollen of the New Zealand flax, but this latter was not sought out purposely for face decoration as the former one was, but used, or accidentally smeared, in their sucking the honey-like liquid from the perianths of the flax. Of pure blue colours, however, the Maoris had but few naturally, save in the sky† and (at times) the changeable sea; in the breast plumage of the swamp

* See, “Trans. N.Z. Inst.,” Vol. XII., pp. 124, 188, etc.

† Here I would remark, that it was always my opinion—I might say, my well-grounded belief—that to the old Maoris the unclouded midnight sky did not everywhere appear to be of so dark, or so clear, a blue as it does to us,—owing to the superior strength of their far-off and piercing sight, through which they saw very many more of the smaller stars, and even nebulae, than we did, or could. I have already mentioned, in a former paper (“Transactions,” Vol. XIII., p. 63, note) my having proved their seeing with the unassisted eye Jupiter’s satellites; and I have also repeatedly proved their seeing not only the “seven” stars in the cluster Pleiades (which was one more than I could ever see), but even more!—eight, nine, or ten. And so, again, in some parts of the Milky Way,—the nebulae in Argo Navis, and in Orion,—the Magellanic clouds, etc., etc., all appeared to them more clearly defined, more starry (if I may so say), than to us. Still, their very expressive proper name for the intense blue sky—kikorangi (on which and its correlatives a chapter of interesting philological exegesis might be written) must be borne in mind. (I believe that I was the first who discovered, or unearthed, and brought into early notice this term.)
hen, the little blue penguin* (Eudyptula, sp.), and the kingfisher; in the mackerel, in a Medusa (common on the sandy sea-shores in summer) and in a few marine shells both uni- and bi-valve; and in two or three inconspicuous flowers of small plants, as Wahlenbergia and Teucrium; Colensoa also bears a blue flower, which is by far the largest of them all, but it is very local and scarce, being only found in a few spots between Whangaroa and the North Cape. Sometimes, though rarely, a chief would wear a portion of the blue plumage of the swamp hen dangling in his ear as an ornament.

I should also observe, that although (as I have shown) the old Maoris had but little of blue colours of their own which they could use, yet on their early becoming acquainted with Europeans—whether resident among them as missionaries, or merely as visitors in the numerous ships which visited their shores,—no colour was better known to them in all its shades than this one of blue. In the ships and vessels—both of the Royal Navy and merchant line—there were the blue jackets, blue shirts, blue trousers, and blue caps! while with the Mission from the beginning, blue was the common and, indeed, almost the only colour used in the female and infant schools, and in the Mission houses and premises, by the numerous female domestics,—all alike were clad in blue, both on Sundays and on week-days. "Navy-blue" cotton prints (dark blue with minute white dots) for the children, and blue linen for the women, and blue woollen shirts, and blue-striped cotton shirts (and sometimes blue caps) for the men; and afterwards (say 40–45 years ago), when the American whalers largely and frequently visited New Zealand (Bay of Islands), they brought their wares for trade, and many useful lots were from time to time purchased from them for the general use of the Mission; and among those goods were the twilled cotton shirt with a much wider blue stripe, and the famed American blue twilled cotton; this last was much stouter and stronger than the thin "navy-blue" cotton print of English manufacture (being made among the cotton-growing plantations, and, I believe, originally, for the use of the coloured slaves there), and was also much warmer than both that and the English blue linen, and more easily worked than this latter, apart from its being very much cheaper; therefore, this new blue article also got largely into use. Its colour, however, was very different from that of the "Navy blue" print, of the dark blue linen, and of the blue woollen shirts, being

* In 1838, while residing at Paihia, Bay of Islands, I had a living specimen of the blue penguin, which I kept alive for some time in my garden. I made it a little skin jacket, with a brass ring in the back, and to this I frequently tied a long fishing-line and let the bird go out to sea, where it dived about and enjoyed itself. One day it bit the line in two, and so got off. It was a wonderful pet with the Maoris.
much lighter, and when it was washed it became lighter still in its colour! Hence soon arose a great number of names among the Maoris for all those different shades and hues of blue. Possibly there might have been a dozen or more of Maori names to indicate these several varieties of blue colour, newly introduced. And while it was a neat sight to see all the children, and all the adult women, sitting together at school, etc., clad alike in decent garments of English blue, which stood washing well and kept its colour, it was strangely different afterwards to note the contrasts in the several colours and hues of blue; for the American twilled blue cotton after a few washings became of a dull greyish-blue colour, and was then known among the Maoris as the "tupapahu" (corpse) from its faded dead appearance. And so, also, the Maoris in the villages, in their visiting the several stores to sell their produce, and seeking blue cloths and garments, could not be deceived as to their shades of colour, neither as to their durability; just as I have already shown (supra) in the matter of the red handkerchiefs. But all those several colours of blue, each bearing a distinct name among them, were shut up by the European under the one horrid term of puurū—blue! which, like several other words, mispronunciations of common English terms, inevitably became fixed, and drove the pure Maori equivalents—figurative and comparative—out of the philological field! It is well known to the oldest residents, that had it not been for the many books published in generally pure Maori by the Mission Press, and extensively circulated among the Maoris at an early period,—and the determination of the missionaries generally (at least of all those who knew Maori well), never to use or to encourage the use of such mis-shapen English,—the language would have completely deteriorated, and that very rapidly, becoming a wretched unmeaning and mixed patois. Above I have merely remarked on the corruption of one word for colour—blue; but I have also (especially at the north) heard too often such words as paraki—black, rari—red, karini—green, waiti—white, etc., used among the Maoris themselves, instead of their own far better and more intelligible words for those well-known and common colours!

Another little early incident,—or series of them,—which frequently occurred before New Zealand became a colony, and which also serves further to illustrate what I have already related, as to their correct knowledge of blue and other gaudy colours, is the following:—Large coloured prints (too often mere daubs) of Scriptural and other subjects, were from time to time kindly sent out from England for the Mission Infant Schools; in the close examination of those coloured prints the Maori adults were as much interested as the children, or more so. And here, while they were often "at sea" as to many of the forms drawn in those pictures (the same
being wholly new), they were never wrong as to the colours of the robes, etc., in which blues, greens, yellows, and reds, often predominated; these they always settled to a nicety of description of their peculiar hues, and mostly by exact comparison, although to do so, occasionally took them some little time.

It was mainly in this figurative manner, and by way of semblance and likeness, that the Maoris of my early days in New Zealand (following out the long-established habits and customs of their forefathers) could receive and communicate knowledge among themselves; and happy was that missionary or teacher, who could empty himself, as it were, of his foreign ideas and ways, and thus go with them after their manner in seeking to impart truth: all such always found willing hearers. Ideas must be given through something; and the old Maoris could only receive teaching in and through modes of thought that were natural to them. For it is not the mere use of terms, but the sense in which they are used and received that must be considered. It is a fallacy, though both a natural and a common one (and one into which Mr. Stack in his paper has fallen) to confuse the image with the thing signified, like mistaking the colour of a substance for its true nature; but the old Maoris always steered clear of this.

But, after all,—though they so well and so clearly distinguished the many natural hues of red and of orange, of blue and of green, and of all gaudy colours,—perhaps their really chief forte, their strict national taste, in this line was shown, in the using and displaying to advantage the more striking contrast colours,—the contraries of white and of black. This was everywhere among them singularly exhibited, particularly in their clothing and in their dress ornaments. In this particular I never heard or read of any uncultured nation that ever approached them. Hence, when first visited, their best dogskin garments, strongly lined with woven cloth of flax, were composed of small white and black squares of dogskin with the hair on, laboriously and firmly sewn together;* much like the regular pattern of one of our chess-boards, only on a larger scale. And so, following out the same severely chaste taste, they often trimmed and adorned their best bleached white flax dress-mats, covering them all over with black hanging strings and tassels set on at regular distances, and with a deep border of thick black fringe,—each separate cord or strand finely twisted by the hand. And just so it was in that other elegant dress-mat of theirs, the korirangi (large variegated shoulder-mantle, or tippet), in which the numerous larger hanging tassels with which the garment was closely

* And here it should be remembered, that while the flax-mats were manufactured only by women, the dogskin-mats were wholly made-up by men.
covered were all severally and regularly annulated, and made of alternate black and white (or black and yellow) chequer-work. Each of those dress-mats, made after the fashion above described, took a long time to manufacture.

The same taste was also observable in their smaller personal ornaments;—in the pure white natural plumes of the white heron, and in the long white semi-transparent muslin-like epidermis of the mountain tísumu plant, and in the artificially-scraped and bleached white inner rind of the paper mulberry, for their black hair; in the snowy-white tufts of the down of the albatros and of the gannet for their ears, to set off the more strikingly the black lines of tattooing in their cheeks. And so with their other highly prized head ornaments, namely, the long black tail-feathers of the kùia bird tipped with white; and the skin of the dark-plumaged ruiti (or parson-bird), with its strikingly-contrasted hanging white neck-feathers suspended in their ears; and also the shark's white tooth (mako), for which, as a contrast, they early sought a yard of black silk shoe-ribbon: this last addition of a black ribbon, was, of course, a more modern one; but it was entirely in keeping with their national taste before it became debased and vitiated;—and in no case did I ever once detect a Maori wearing a red or gaudy-coloured ribbon to suspend his white ear-pendant of shark's tooth.

Before, however, I quit this part of my subject (having brought prominently forward their dresses made out of their white and black dog-skins), I would also briefly remark, that although I have seen very many of their old and ancient carved and ornamented staffs of rank, they were all hung and decorated with white hair only, obtained from the flowing tails of their white dogs; and I never saw, or heard, of such a staff being so ornamented with the hair of the tails of their black dogs. And this could only have arisen as a matter of similar general taste; the white hair, when new, being a much greater contrast to the carved dark and stained wood of the staff, than the black hair could be.

I have shown how greatly the old Maoris loved a pure white colour, and to what great pains, and even dangers, they went in order to secure ornaments, etc., possessing it in its purity. Some of our early settlers will also recollect how very much the Maoris of 25–30 years back (before they generally adopted European garments) preferred pure white calico sheets as open flowing garments for summer wear; for adults as well as for children. And not a few of our colonists (possibly some of my audience here this evening), who have travelled with Maoris, or who may have fallen-in with them in travelling, will have noticed how very quickly the
Maori has descried something at a great distance,—something white, or whitish, or, at all events, of a lighter colour than its environment; whether a distant sail at sea,—or a slip of earth or spot in a far-off cliff,—or a patch of snow on the mountain’s crest,—or a white-breasted pigeon high up in a tree,—or a gull flying over the sea,—or a settler’s house, or even a sheep in the distance;—how readily his eye had caught the object, and that entirely owing to its light or white colour. Now this is quite in keeping with our latest scientific investigation concerning what is known as “colour-blindness;” and serves to show, to establish, a priori, how very free the Maoris must have been from all such infirmity. Indeed, for my part, and separate from my experience and experiments among them, I cannot perceive how the old Maoris were to live if such a failing ever existed, seeing that so very much in their daily life depended on their faculty of clear, correct and distant sight. Neither can I bring myself to believe that any such imperfection ever pertained to man in a state of nature.

I find that Mr. Brudenell Carter, F.R.C.S., has lately been giving a series of Cantor lectures at the Society of Arts on colour-blindness; and, among other things, he clearly showed and explained how “that the appearance of the world to the colour-blind must be less bright, less luminous, than to the colour-sighted; and that the appearance of whiteness, as familiar to the latter, must be unknown to the former. Whiteness is the result of the blending of the three primary colours of the spectrum in correct proportions, and the colour-blind, who perceive only two of these primaries, and can consequently only blend two, must see white surfaces as if their colour were compounded of red and violet, of green and violet, or of red and green, according to the primary which was wanting from the perception of the individual.”

But I must close.

Wishing to do justice to my subject, my paper is more diffuse and anecdotal, and at the same time longer, than I had originally intended. I fear, moreover, that, in a few instances, I may at first sight seem to be a little tautological. But when I considered, on the one hand, what Mr. Stack had painfully endeavoured to establish (as against the old Maoris’ superior natural faculties, and especially their knowledge of colours),—and, on the other hand, my own long and varied experience to the direct contrary, it seemed to me that I had no alternative left, if I wished the truth to be known concerning them, but to state what I knew, and to supplement the same with a few facts in support thereof; which, if I did not thus make known, would in all probability die with me.
I will conclude this paper with an excellent observation by the celebrated Professor Owen:—"Past experience of the chance aims of human fancy, unchecked and unguided by observed facts, shows how widely they have ever glanced away from the gold centre of truth."

Appendix.

A Paradigm of the word Whero, one of the (several) Maori terms for the red colour.

"It is said, that the New Zealander's perception of colours was defective and weak; this, however, is a mistake. Their colours were mainly divided into three distinctive classes,—white, black, and red;—but they were never at a loss clearly to express all colours. They used them, much as an English mariner uses the four names of the principal winds and points of the compass, repeated and involved to make 32, only much more expressively; as they also used with them several adjectives, increasing or lessening the meaning; also the words themselves reduplicated as diminutives. Besides which, if a New Zealander wished to convey to another a very exact idea of any colour intended, he would mention that of some natural object which was of the same shade of colour," etc., etc. (W. C. "Essay on the Maori Races," § 83, Vol. I., Trans. N.Z. Inst.)

Whero = red.

I. Ascending: intensifying.

(Indicating, pure, clear, strong, brilliant, and lasting red colours.)

Kowhero.
Tino kowhero.
Tino whero.
Tino whero rawa.
Whero nui.
Whero nui rawa.
Whero nui whakaharaha.
Tino whero nui rawa.
Tino whero nui rawa whakaharaha.
Tona whero i whero ai.
Tino whero whakahero.
Katahi te tino whero.
Katahi te mea i tino pai toma whero.

* Palaeontology, p. 443; Second Edition.

† There are also several other proper names of red,—as, kura, kurakura, ngangana, pakurakura, ura, etc.
Transactions.—Miscellaneous.

Koia rawa  te nui o te whero!
Koia kau  te pai o te whero!
Ehara    te kaha o te whero!
Tena     te ataabua o te whero!

Tino whero rawa, anana!
Whero kita.
Whero kitakita.
Whero whakamoe kanohi.
Whero whakakorekoreko kanohi.

II. Descending: lessening.

(1. Lighter, but fair reds.)
Kowherowhero.
Wherowhero.
Kowhewhero.
Whewhero.
Towhero.
Tu-a-whero.
Tu-a-kowhero.
Tu-a-kowherowhero.
Tu-a-wherowhero.
Tu-a-kowhewhero.
Tu-a-whewhero.
Wheronga-parakarakaka.
Whero-kowhai.

(2. Fainter, but having more or less of red and pink hues.)
Maa-whero.
Maa-whero maa-whero.
Maa-herowhero.
Maa-tu-a-whero.
Maa-tu-a-herowhero.
E iti ana tona whero.
E iti ana tona wherowhero.
E itiiti ana tona whero.
Maa-herowhero tu-a-whakamaa ake.
Maa-herowhero ake.
Maa-herowhero iho.
Maa-tu-a-herowhero iho.
Maa-tu-a-herowhero iho.
Ahua whero noa iho.
Ahua whakawhero noa.
Ahua wherowhero noa iho.
Tu-ahua wherowhero noa iho haere ake ki te maa.
Tona whero, he wherowhero noa iho otira ahua whakawhero ake.
Ata wherowhero.
Tu-a-kowhewhero.
Tona ata e ahua wherowhero ana.
(3. Dark-red, red-brown, etc.)
Whereo-pakaka.
Whereo-tu-a-pouri.
Whereo ahua pouri.
Whereo ahua whakapouri.
Whereo-parauri.
Kihai } i maarama tonā whero.
Kahore }Whereo-rere-kee.
 }}}Whereo-tangi-kee.
}}Whereo-ahua-kee.
}\}Whereo-ahua-tangi-kee.
}Whereo-tu-ahua-kee.
}Whereo-tu-ahua-tangi-kee.
Whereo-pouri.
Whereo-pango.
(4. Faded red colour.)
Whereo haamāa.
Wherowhero haamāa.
Whereo tupapaku.
Wherowhero tupapaku.
Whereo kua kore.
(5. Ugly, disagreeable, bad, red colours.)
Whereo kino.
Whereo kinokino.
Wherowhero kino.
Whereowhero kinokino.
He whero ano ra, otira he whero tu-ahua kino.
Whereo marutuna.

etc., etc.

* These six terms are really beautiful ones, possessing great depth of meaning: A good and interesting philological chapter might be written in their exposition.
To most, if not all, of those terms and idiomatic phrases (of which many others could be readily furnished) for the various natural colours of red, would be added the thing possessing that particular hue of red in the estimation of the speaker; who would also aim to be correct, otherwise his comparison, or simile, would be sure to be ventilated and roughly handled. Such was generally given with the comparative particle me (like: just as) preceding the noun: as,—tino whero, me te pua raataa—of a deep red, like the flowers of the raataa tree: whero, me he hourea—red, just as a craw-fish: whero, me he toto pango—red, like black (or old) blood. There were also several other modes of drawing the comparison.

Of those examples I have given above, I have repeatedly heard a very large number of them used.

ART. IV.—Notes upon the great Floods of February, 1868.

By W. T. L. Travers, F.L.S.

[Read before the Wellington Philosophical Society, 3rd September, 1881.]

In February, 1868, the northern part of the South Island was visited by an extraordinary rainfall, which did a large amount of damage and left indelible marks of its occurrence wherever the waters of the main rivers rose above the height of ordinary floods. The general steepness of the mountains within this area necessarily causes a rapid superficial drainage, and, as a consequence, a rapid erosion and displacement of the materials of their surface, so that during heavy rains the channels of all the draining streams are not only quickly filled but their waters become heavily charged with silt and gravel, which is carried into the main watercourses, converting them into huge muddy torrents. Almost all the main rivers in this part of the South Island are, in effect, torrents even to their mouths, the average slope of their beds being little less than 35 feet to the mile. There was, moreover, this peculiarity in the rainfall in question, namely, that the quantity which fell within the first few hours was so great as to fill every stream bank high, and as the rain continued to fall almost as heavily for many hours after that had occurred, the main rivers not only became enormously flooded within a singularly short period, but maintained their flooded condition for an unprecedented length of time. Many causes, too, resulting from man's foolish and wanton interference with natural operations, had contributed to bring about a rapid accumulation of the rainfall in the main rivers. In the first place, the forest had been cleared by fires and otherwise, but principally by fires, from a large extent of the eastern slopes of the mountains in the very localities in which the ordinary rainfall is usually