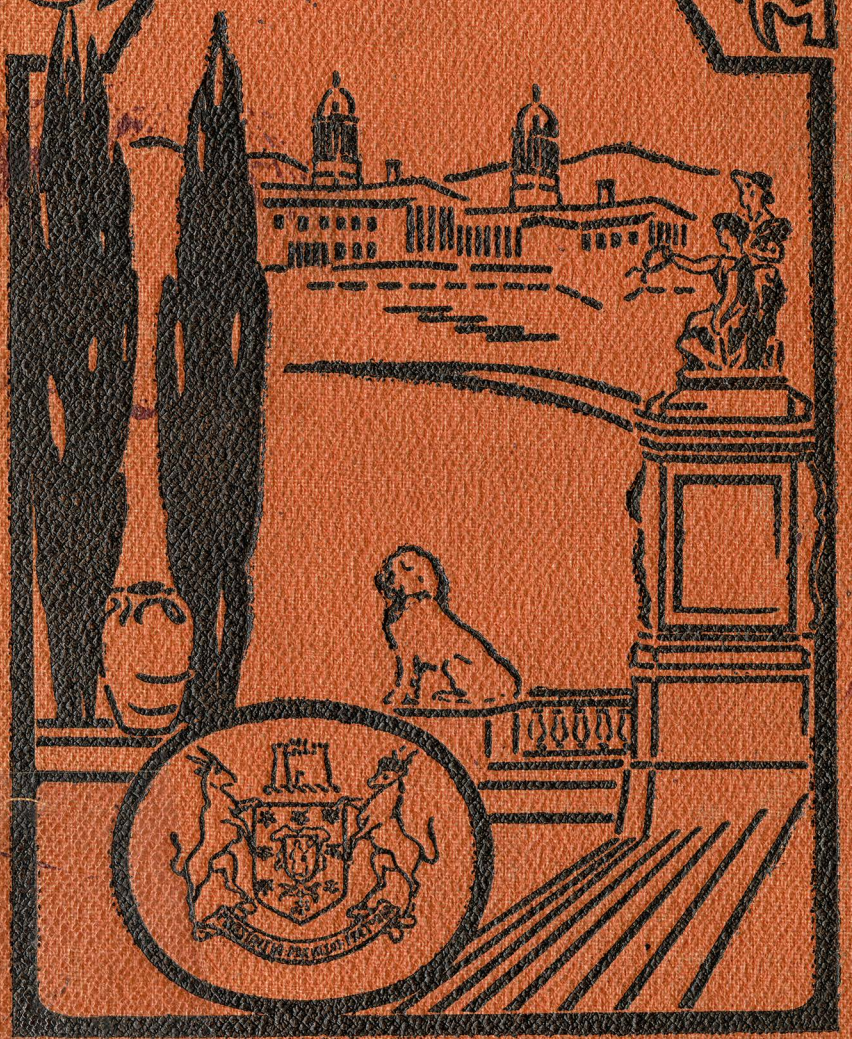
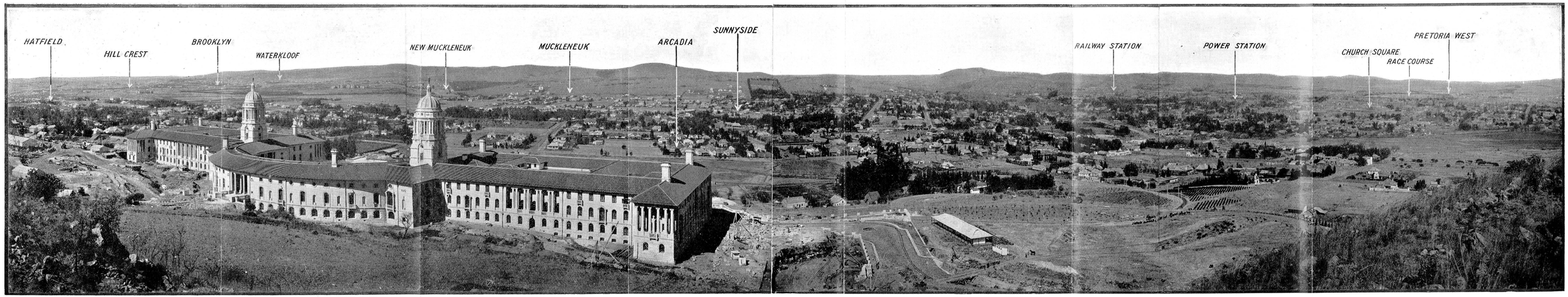
THE CITY OF PRETORIA





PANORAMA OF PRETORIA.

UNION BUILDINGS.

The City of Pretoria and Districts.

An Official Handbook describing the Social, Official, Farming, Mining, and General Progress and Possibilities of the Administrative Capital and Surrounding Districts. . . . .

Issued under the joint auspices of the Pretoria Municipality and the General Manager, South African Railways.

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Introductory.

CHAPTER I.

THE Union Building at Pretoria is now nearing completion. When finished it will be in many respects the most unique building in the country, for in it will be accommodated the bulk of South African officialdom—the Ministers of the country and the advisers of the Ministers; the departmental heads and the technical experts; the agricultural, the pastoral, the mining, the commercial, the financial, and the political specialists, as well as the hundreds of other officials upon whom the administration and the advancement of the Union so largely depend.

The building is worthy of the purpose for which it is intended, and its formal opening will be an occasion of general interest and national importance. Nationally it will signalize a new era of administrative centralization for the better conceiving and diffusing of concerted harmonious policy; socially it will be the function of the year. Who can be in Pretoria will be there then. Who cannot come will seek to know something of what happens, and something of the

place. Pretoria will loom large in the public attention, and to many the reason will not be apparent, for it is, after all, a city with which the country at large is not as well acquainted as should be the case. People generally do not know Pretoria as intimately as it deserves to be known, as intimately as in their own interest they should know it.

The moment is opportune for remedying this. The dexterous Capuchins, to quote Macaulay's text, never chose to preach on the life and miracles of a saint until they had awakened the devotional feelings of their auditors by exhibiting some relic of him—a thread of his garment, a lock of his hair, or a drop of his blood. Similarly, advantage may well be taken of the lively but possibly transient interest which the forthcoming opening will excite to say something about the progress and possibilities of Pretoria; to gauge its relative importance amongst the towns of South Africa; to indicate what visitors may see, and the significance of what they see; to show what there is about Pretoria to please, what to displease; to weigh advantages and disadvantages fairly, and prove that though expansion may not have been as great as at Union the optimists predicted, it nevertheless has been considerable and promises to increase, judging from all augurs, at a ratio more rapid than ever.

Everywhere, increasingly, investors and workers are turning to places with such rapid developing powers; everywhere tourists seek new fields. It therefore cannot but be in the general interest to reveal Pretoria as it was, is, and probably will become.

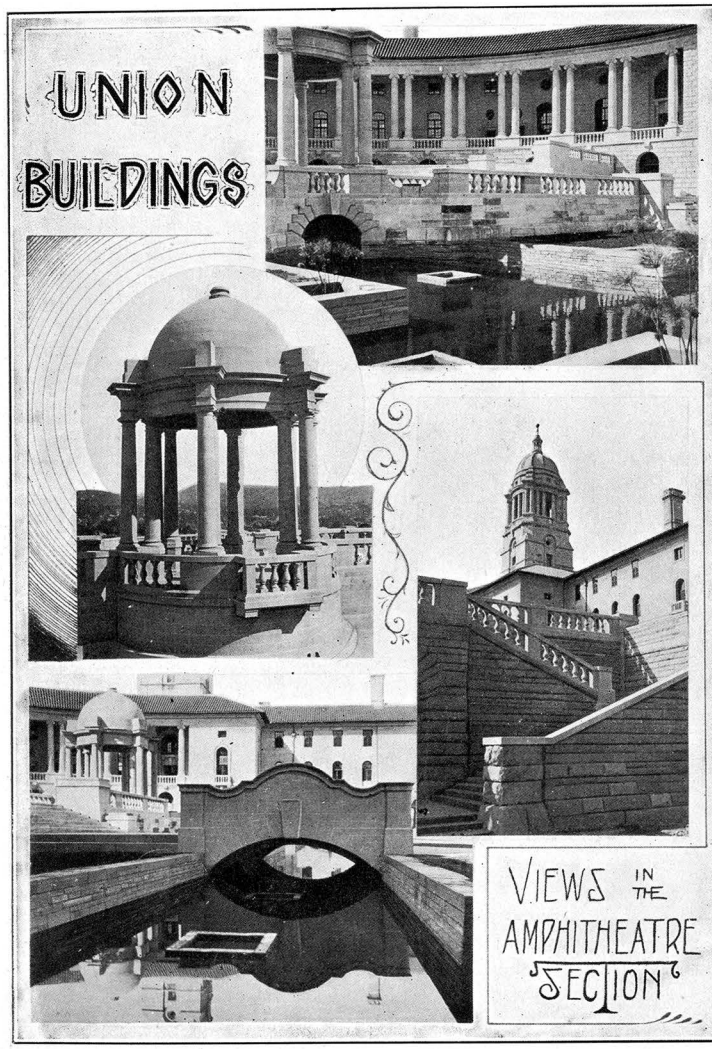
A Backward Glance.

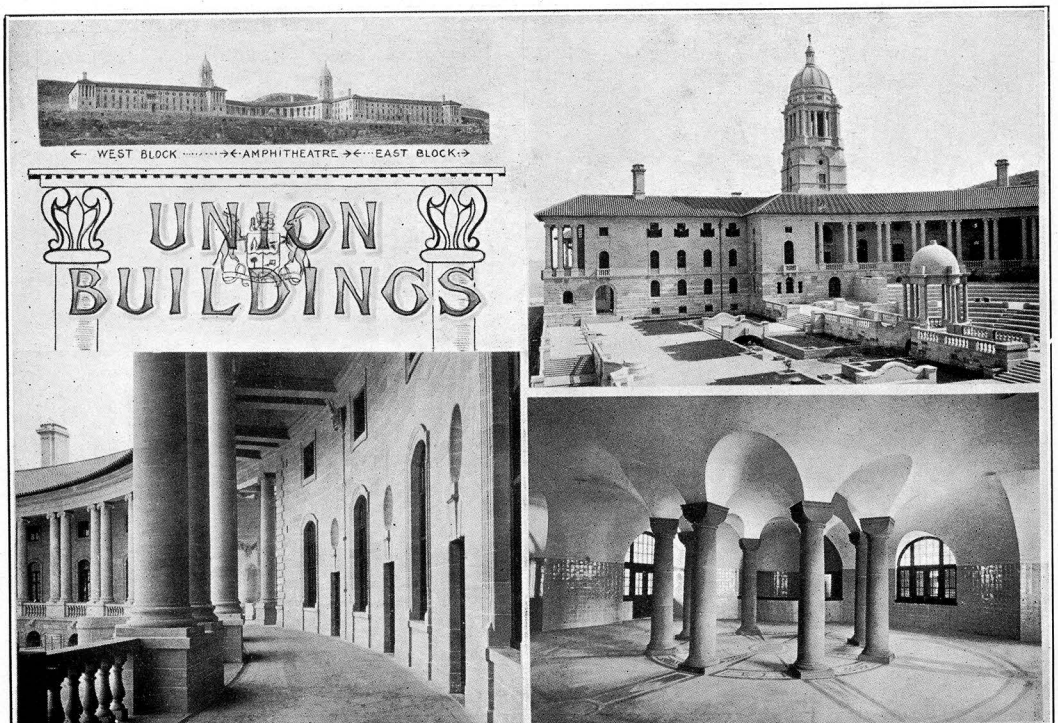
CHAPTER II.

TRIBULATIONS attend the growth of every country, and South Africa has had its share. Native war and civil strife, drought, flood, and pestilence have been its frequent lot. They however mark rather than mar its history, prove a high national spirit and indomitable grit rather than a general incompetence or lack of perseverance, for dissensions which threatened disruption, spread bitterness, and caused intense hardship, though they might by more temperate counsels have been lessened, if not avoided, were by unusual adaptability and resource generally turned from looming calamity to a greater expansion—a seeking of fresh pastures and better understanding, an adoption of improved methods and an opening up of new country : a wider spreading of settlement and an increase in stability When two sections of the population disagreed, the weaker generally withdrew to develop the unoccupied hinterland ; when drought, flood, or stock disease assailed, they entailed loss but taught a sometimes needed lesson.

The contemplation of the past is therefore profitable as indicating that, whatever our present obstacles and differences of opinion may be, they are minor to those already successfully surmounted; from which may reasonably be inferred that rapid and considerable though past development has been, the Transvaal development now afoot is likely to be greater and more rapid. For conditions are better, the outlook brighter, than ever before. South Africa, or at least that portion which is now the Union, has changed radically for the better. The white races have been united, the wilds reclaimed, the natives tamed by law and order. Greater security and comfort, more and happier homes, exist than when civil strife, kaffir risings, and the toll of pioneering swept tragedy through every camp and desolation to every outpost household. Danger has gone, and with it much of hardship; fang and claw no longer prey around the outspan; no *impis* lie within the kopje's shadow, waiting to stab and murder when the time arrives; peace and prosperity are assured. But the change, though greatly beneficial, has not been all gain. The aesthetic has suffered. Much that made even a hard uncertain life more attractive than the soft ease and surety of the present, much of the picturesque, and much of the romantic, has also gone. The myriad deer no longer flit across the moonlit plain. The rhinoceros has forsaken his haunts, the elephant takes his midday ease in other shades. No free-gift farm or foundling state awaits the trekker; no mighty herds entice the hunter; no dreams of untold wealth are dreamt in crazy mining huts. The drifts are unchurned, the clean-aired bush-girt by-ways are unfurrowed, the solemn silences and sun-washed

Plate III.





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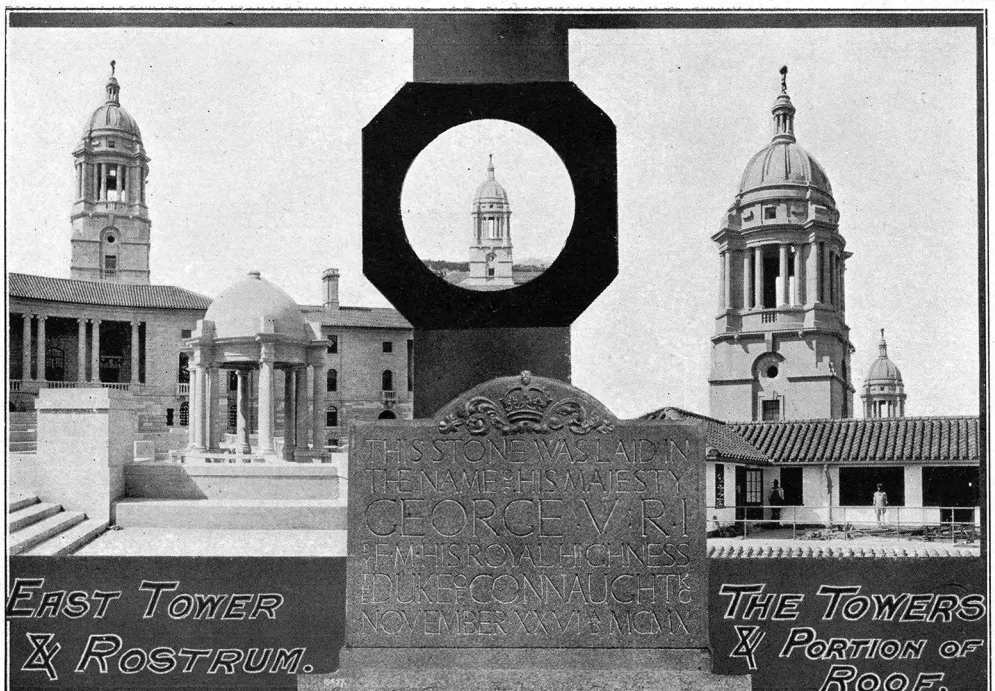
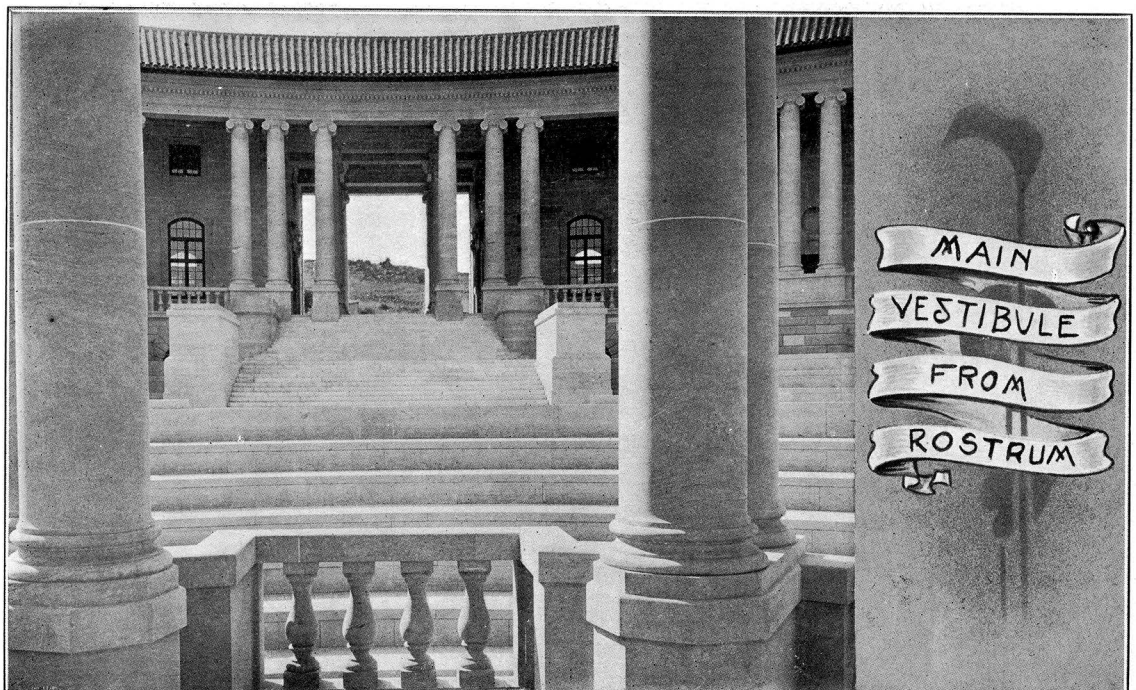


Plate VI.



solitudes of the veld unruffled by coach or transport wheels; for the railways carry all, swiftly and without ostentation, and where the adventurous once rode in open exultation, the noiseless plough now plies in hidden field or the miners burrow unseen within the earth.

It is therefore not only profitable for future guidance, but pleasurable for present recreation, occasionally to take a backward glance, to reconstruct the past, recall the days of long ago, and visualize the scenes and circumstances in which, deliberately or by chance, men, and gentle women and little children, on lonely farms and distant mission stations, in pioneer towns and rough wild mining camps, on trek and in the laager, suffered and sometimes died that the sovereignty of the white man might be proclaimed and maintained, that unity might arise, and peace, progress, and prosperity follow, so that out of the wilds cities like Pretoria might be reared.

It is well to recall how great and how wonderful has been the progress, especially throughout the Transvaal, since the days when the hyena howled where the smoke-stacks of the Rand now belch, since Moselekatse harangued his slayers of a million victims, where the stately Union Building in Pretoria now stands, since the white inhabitants fought each other, where the brave of both sides now lie buried beneath the wreaths of a nation's united esteem.

Thus Pretoria, though not founded until 1855, owes its existence primarily to disruptive events such as those we have cited—to the events of 1836, which had their inception in Cape Colony, and caused so much of the dissension, so much of the strife, but indirectly and

ultimately so much of the good which has attended South Africa!

The means have generally justified the end, but in 1830–36 the outlook was discouraging. It was one of the darkest periods through which the country has passed. No white men, excepting occasional hunters, explorers, or squatters, had penetrated or could claim intimacy with what are now the Free State and Transvaal Provinces. Excepting for a few pioneers in Natal, settlement was confined to Cape Colony; and the position of the settler there, especially in the remoter districts, was an unenviable one. He was harassed by native raiders. He was goaded by the policy of a Government which would neither attempt to check the raider nor allow the raided to do so. He was faced with the prospect of consequent ruin, or if by chance that were staved off, then by the prospect of heavy loss through the ill-starred regulations for the emancipation of slaves which allotted to the Colony a third the compensation its slaves were worth, and then insisted that the large portion of that inadequate compensation should escape the local slave-owners through the obstacles placed against obtaining payment. No payments were to be made in South Africa for released slaves. No force was to be sent, or locally raised, to protect the remoter settler. He was on the horns of a dilemma, and, turn as he would, relief seemed possible only by leaving the Colony.

The blame, however, excepting possibly in the payment of slave compensation and inapt social legislation for which the Colony was unripe, was not wholly on one side. The position of the governing was hardly less trying than that of the governed. Conditions of life were very different to what they now are; the

native problem, though still great, was greater; white settlers were fewer and more widely scattered; the vast native hordes were more turbulent.

The Kaffir was a man differing widely from his modern descendant. He had not been subdued by contact with civilization. His ardour had not been tamed by industrial labour. Circumstances had not forced him into town or mine. In his own domain his women, as now, did the work—tilled the fields, hewed wood, and carried water for the tribe. The Kaffir himself collected cattle and practised arms, and of the two occupations that of fighting was the main. This was natural. Cattle were the symbol of a native's wealth and status. As such their possession was to be coveted. But the very existence of the tribe depended on its fighting strength. There was no law but that of might. A man of courage, versed in the use of the stabbing spear and battle-axe, and deft in his own protection with the ox-hide shield, was an asset to every chief and as such esteemed. Consequently every adult Kaffir was, or affected to be, a fighting man—a fighting man first, and a rancher, cattle thief, tribal minstrel, or hunter after. The prevalent spirit was a warlike one.

Then were the people amongst whom the remoter Cape settlers had, apart from their farming difficulties, to maintain themselves and families as best they could. In such circumstances conciliation had little prospect of being effective. The native had nothing to gain from peace, and no natural preference for it. War was the object of his whole system—to defend his possessions when compelled, to augment them by looting when possible. Victory or defeat in battle were the only arguments he appreciated; the rifle alone, not the *indaba*, had the power to sway him.

This the remoter Colonists saw and urged; but the danger was easier to discern than to avert. The military forces of so sparsely populated a country as the Cape were admittedly inadequate for the proper protection of so extensive a territory as the roving instincts of the Colonists had caused them to spread over. Those resources could be made adequate only at a cost out of all keeping with the comparative poverty of the Colony. It seemed good to the authorities to conciliate rather than fight the turbulent native. But as the native's instinct and aspirations, natural taste, and whole training were for war, this policy proved impractical. A scuffle with an outpost, which resulted in the death of a minor chief, was by the natives made a pretext for vengeance; and then ensued a period which forms one of the ghastliest in our history. Within a few days fifty of the scattered settlers were butchered; scores of homesteads were plundered and destroyed; many thousands of cattle were swept to the Kaffir kraals.

Nor was this all. Either because for the time being the natives were glutted with success, and so more than usually pliable, or because the settlers, stirred to their utmost, excelled themselves, the reprisals which followed quickly resulted in the marauders being driven into more distant territory. Neutral tribes were settled as a buffer between them and the settlers, and it may have been that affairs would have remained so indefinitely, necessitating alertness and occasional encounters, no doubt, but on the whole a state of affairs not intolerable. Exeter Hall, however, thought differently. The measures had been taken purely on local initiative. They were measures of self-defence, but they were not approved oversea. The authorities,

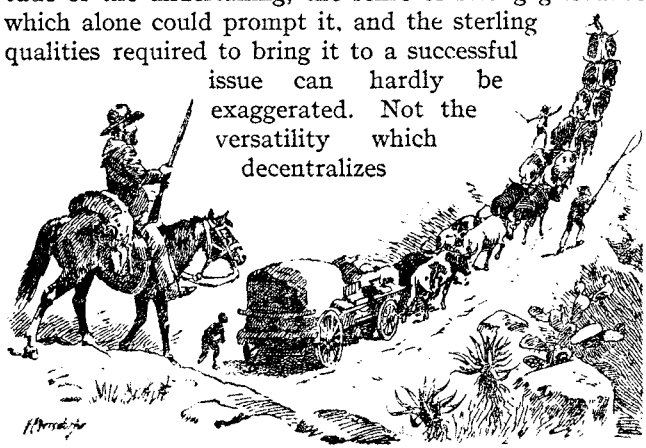
probably mindful of the minor chief's death, reversed the Colonists' action as far as possible, removed the neutral human barrier, gave back to the warriors their old territory; and did so on the contention that the native had been provoked by the settler.

On top of all came the slave trouble. The owners agreed that the slaves should be freed, but wanted them freed in batches, so as to disorganize industry as little as possible; and so as not suddenly to throw on the country a numerous horde of free but largely irresponsible people, unaccustomed either to the joys or the cares of independence. The case had its strong points, but the issue was one of human liberty, and if one man were to be released from bondage there was no justice in retaining another through no fault of his own. The slaves were released *en masse*, and, without police or military supervision, without the compulsion to work, threatened at least to thieve, if not worse. The compensation was absurdly low, and payable only in London.

Unprotected against the exultant native enemy, not only deprived of the labour of their slaves, but threatened by their depredations, and often nearly ruined by monetary losses through the unfair compensation, the settlers were in a worse position than ever. To a large number of them it seemed to threaten ruin. To the Dutch-speaking portion it proved intolerable. Prone at the best of times to take matters into their own hands, restraint, especially in the face of strong provocation and calamity, was little to their taste. Large numbers decided to leave the old Colony. North of the Orange River the country was mostly unoccupied, and apparently claimed by no one. Life there would necessarily be one of hardship

and isolation. It would mean separation from all the amenities and prestige, but also from the burdens and irritations of British rule. There in the vast and little-trodden solitudes a man might live his life according to his notions of right and wrong, establishing such government as seemed to him best, pursuing such ideals as fitted his mood. Ordeals of unusual rigour and the disability of remoteness from the civilized world would be his lot; but so would freedom and justice, no power being near enough to restrict the one or interested enough to tamper with the other.

So, in 1836, the Great Trek began, that movement from which two fine States were to grow. The magnitude of the undertaking, the sense of strong grievance which alone could prompt it, and the sterling qualities required to bring it to a successful issue can hardly be exaggerated. Not the versatility which decentralizes



aim, the restlessness which hinders sequence, or the imagination which anticipates difficulties and pictures miseries yet to come; but solid patience, deep faith, and a large indifference to the vagaries of fate were the qualities most likely to turn such an undertaking to success. These qualities the Voortrekkers had. They were a sober, slow-going, but a sagacious, courageous race. They lacked the vivacity of the townsman, were largely without his imagination, had not his stock of varied, though often superficial, experience. But they did possess the talents and attainments natural to their situation—the quick eye, the patient resourcefulness, the strong sense of rough but ready justice. They had the bodily and mental stamina to sustain fatigue and disappointment; they were strengthened by adversity, toughened by struggle. Their courage, self-denial, and endurance were admirable. Their history is rich in acts of heroism and devotion. Their hospitality and natural kindliness were pronounced.

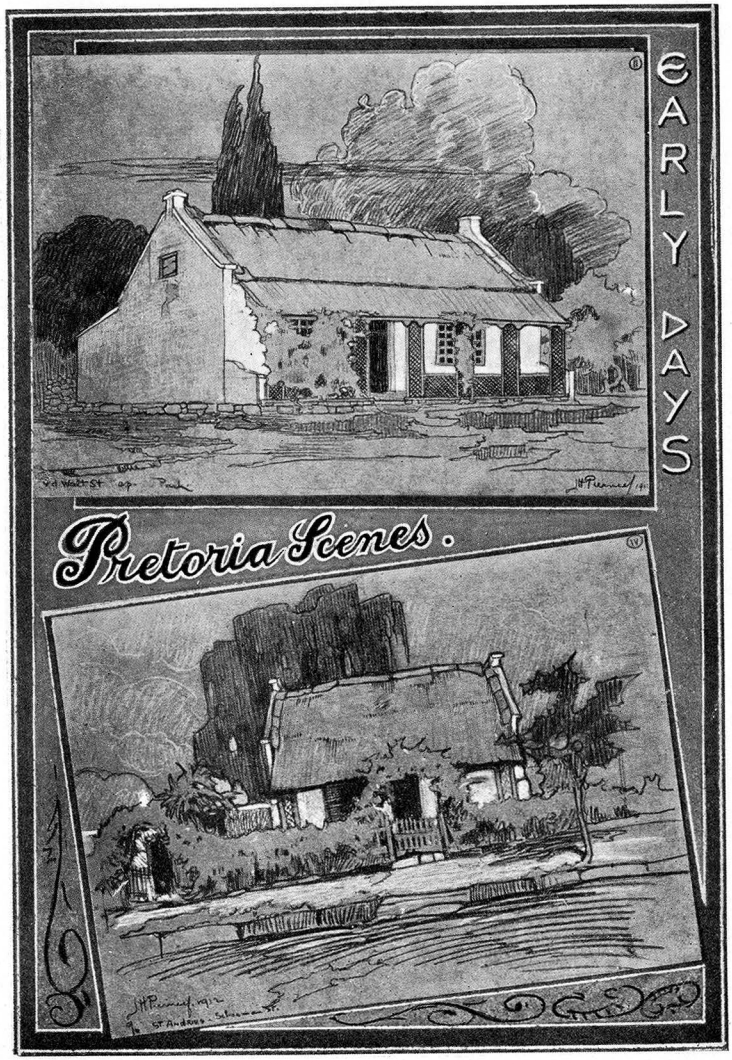
Such were the people who ventured forth, in little bands, to conquer the wilderness and tame the barbarian; who, like the Pilgrim Fathers, opened the way to comfort and happiness for the thousands that were to follow. They rose superior to every discouragement, ultimately surmounted every obstacle—and such obstaces! To-day a journey through any part of South Africa presents few inconveniences. The traveller knows exactly where he is going and what for. He travels in security, comfortably and even luxuriously. Seventy years ago it was different. A journey to the interior was not lightly undertaken, even by the hunter accustomed to imperil his life and trained to elude danger. To uproot whole families

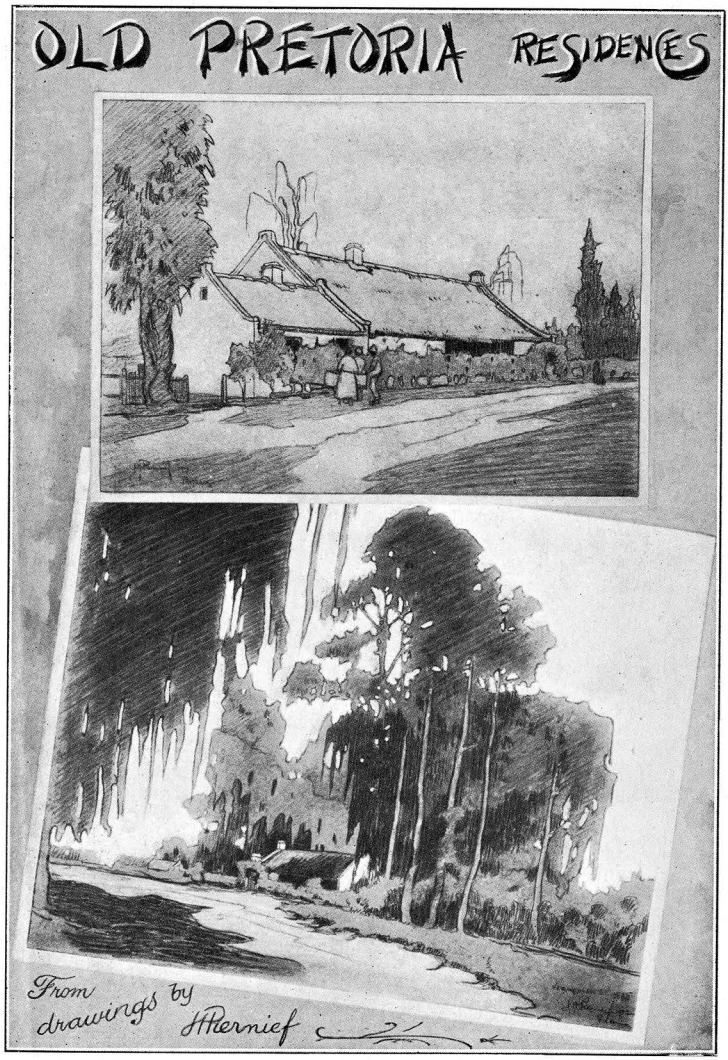
and send them there was heroic and uncertain in the extreme. No one could foretell what dangers would be encountered or what destiny awaited the pioneers. It was a matter of chance. On every side, once the border was crossed, the country was fraught with danger: and beyond lay the Great Unknown.

Nor were the inevitable hardships less than the probable perils. Transport facilities, as we know them to-day, were almost entirely lacking. Between the advancing voortrekkers and the Colony they were leaving, there were practically no lines of communication: an occasional dispatch-rider, perhaps; but no railways, no intermediate depots for refreshment and replenishing stores; no postal or telegraph services; no hope of assistance, in the event of trouble, from the Colony behind. Once they crossed the border, intercourse with the outer world would for years, perhaps for generations, be infrequent and uncertain, owing to the hostility of marauding native tribes, the greatness of the intervening distances, and the absence of roads. And that the native hostility to encroachment on domains previously little used by them was anything but passive, the records prove. Only too often did it happen, especially when the trekkers travelled in small separated bands, and more especially when such isolated bands were surprised, that suddenly from the stillness the war-cry rose from thousands of savage throats; and when the little laager could no longer hold out, when the scherms were broken and the ammunition spent, when the firing was over and the spears were at rest, the last heart-throb of the gallant white band had beaten.

The commissariat, too, was a source of weakness and anxiety. A little bartering for food with natives

Plate VII.





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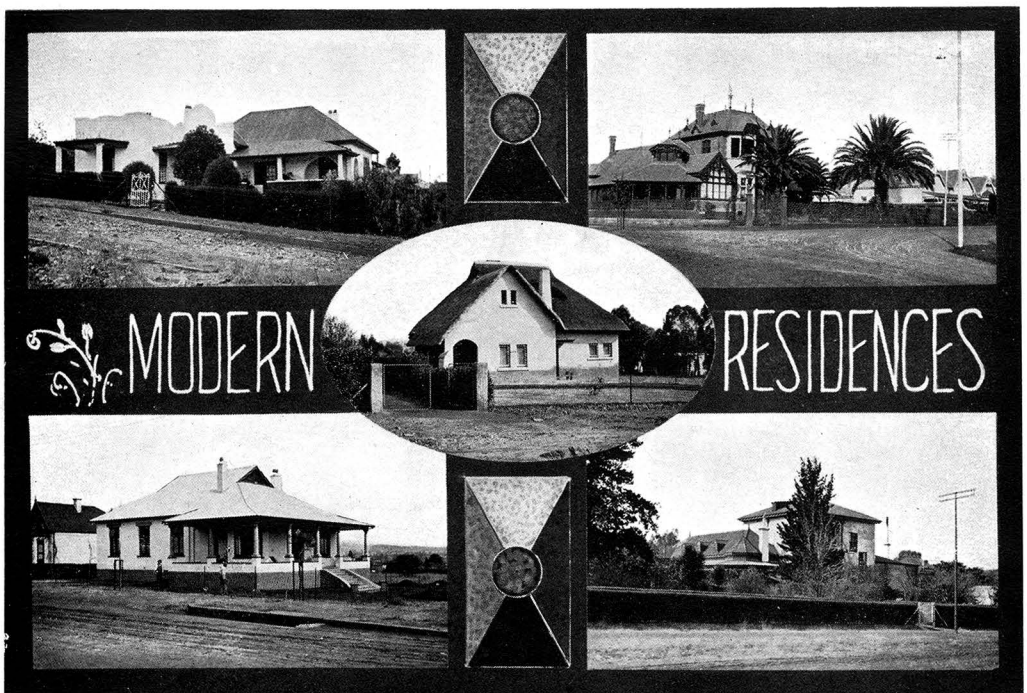


temporarily friendly might be possible, but was uncertain. Game was abundant but migratory, and for all that was known to the contrary might be scarce at seasons and in places. What the trekkers would require in the years to come had therefore mostly to be brought with them. Grain for seed and for sustenance until crops could be grown had to be found room for, though for months the trekkers lived mainly and sometimes exclusively on the game they shot, as not much grain could be carried, wagon space being limited and largely occupied by the first essentials—powder and shot, and by the women and children, the cooking utensils, farm implements, and a little clothing and bedding. Few luxuries were carried, excepting sugar, coffee, and tobacco; little furniture. Water was a matter of chance. It was a frugal existence to which the trekkers vowed themselves.

They started in different parties from various centres, at various times, under various leaders. Finally the day for departure came. The loads were carefully apportioned, the flocks and herds assembled. Such articles as at the last moment could be crowded on the wagons—a few simple pieces of furniture, heirlooms with many poignant associations—were loaded. The bullock teams were inspanned; the women and children took their places beneath the hoods of the wagons. The shrill cries of the Hottentot herds and the sing-song droning of the drivers mingled with the lowing of the cattle, the creaking of the axles, and the sighs of those who felt a parting pang. From horizon to horizon the plains smoked with the dust of many hooves and wheels, as the farmers, turning their backs on abandoned homes and hopes, faced the North and whatever it might hold.

Over the plains the slowly moving emigrant train wended, scores of wagons, one after another—wagons which for months, and in some instances for years, were to be the only homes the trekkers were to know; their only tie with the civilized world; their shelters from summer heat and winter frost; their refuge in sickness and in peril; their monuments and their epitaphs when the barbarian attacked, and the trekkers, having scattered in small bands, were slain; derelict wagons stranded on lonely plains, the ragged remnant of their bucksail flapping dismally in the sighing winds, and telling in after years the tale of what befell. Ponderous, lumbering, groaning wagons, uncouth to look at and unwieldy to handle, but the very thing for pioneering in a rough wild country: the wagons which have made South Africa.

The trekkers travelled slowly, grazing their herds as they went, hunting a little, repairing wagons and kit when necessary, and camping where water and safety suggested, for the village and the cultivated farm were now far behind, and the pioneers had to fend for themselves, taking what came. Over the southern grasslands they passed into the higher altitudes of the parched alkali flats of the Great Karoo, where water is scarce and the air so thin and tonic that the mere act of breathing is a joy. Finally, the Orange River was behind, and when what is now the Free State was well entered it was decided that of the more important emigrant bands, which had converged, one portion should branch off to what is now Natal, the other continue north.

It was a pleasing if not beautiful country, a country to warm the instincts of a rancher; and, above all, seemingly a peaceful country in which no powerful

enemy need be feared. A rest was therefore ordered, and for a while the evening pipe of peace was smoked in thankfulness beneath the Free State stars. Refreshed, the trekkers resumed their journey. Theirs was now a pastoral life of almost Biblical simplicity, resignation tempering hardship, hope for the future displacing discontent with the past. But it was not a picnic. Moselekatse, the murderous, was on the alert and had to be guarded against; and nature, as well as the barbarian, added trials. To traverse the desert or new country in which the water-courses are undefined is to know either the horror of thirst or the many and arduous expedients necessary to locate one camping ground before another is vacated. Whoever has been racked by fever in a jolting wagon, far from skilled attention and consolations, knows the despair of such a situation. Those who have lain with the transport wagons by the drift, in strange country, the waters rising steadily, the rain beating in fury, night as dark as ink, cattle, escaped somehow, running amok dazed by the lurid lightning, know the tedium and discomfort of days and even weeks of waiting; when water oozes everywhere; when earth and woods are sodden and all is quagmire; when fires will not burn and food spoils; when the dawn breaks grey and dispiriting, to reveal the carefully placed wagons islanded by flood, nails bleeding and limbs exhausted by the struggles of the night, and tempers limp as the sodden clothes and bedding in which one sleeps and wakes. Whoever has experienced these things will appreciate some of the minor difficulties the trekkers had to contend with. And whoever by the restlessness of the animals has been awakened, shuddering, to the awful sight of the

autumn veld on fire, miles of lurid flame crashing towards the camp, will realize another of the many obstacles and discouragements the trekkers had to encounter and surmount, without the playing of bands, the flying of flags, or the cheering of crowds at the end of the conquest.

It was, as we have said, no picnic. When the country permitted the wagons to travel abreast, they were so sent in three columns, which drew together when camp was made and formed a triangle into which the stock were, as far as possible, driven for safety. In the spaces between the wagons thorn bushes were, whenever practical and danger threatened, filled, so that nothing might enter from without except at the appointed place. Each man slept with his rifle by his side. The powder and shot stood ready. And on the outskirts the sentinels lay, guardians through the long, still night.

And so, steadily but surely, in spite of every obstacle, the emigrant parties progressed, some to find early graves, some to found republics.

The party bound for Natal is not our main concern in this sketch of the events which led to the founding of Pretoria. The party which had elected not to go to Natal again divided. One section, under Trichardt, passed on to the extreme north of what is now the Transvaal, to the Zoutpansberg. The other section of the party, under Potgieter, obtained from a minor chief a large portion of the Free State, and elected to stay there, for the time being at all events. Mosele-katse was now ripe for trouble. Convinced of his title to the land, or, at any rate, not desirous that white

settlers should have it, he sought what to him was the only argument, and dispatched an *impi*. It fell on the trekkers near what is now Kroonstad, and was happily defeated with such severe loss that Moselekatse retired.

So the Free State was by the trekkers accounted theirs by right of conquest, and in 1837 Winburg was chosen as the seat of government. Winburg is now little more than a village, and the political importance it once possessed has waned; but historically it will always be of interest, for it was mainly from there that, as time went on, the trekkers, whose numbers had yearly increased by additions from the Cape, extended into the further north which the Zoutpansberg party had already entered, settling in small communities in Potchefstroom, Lydenburg, and Rustenburg.

Thus settled, each little community had its own head and its own aspirations. Each professed the dignity but lacked the strength of a state. There was jealousy between the leaders and danger from the natives. To counteract the jealousy some government, more regular than hitherto necessary, was required; to avert the native danger an amalgamation of white strength was essential. Union was decided upon. In 1856 an attempt was made to join the divergent parties, Martinus Wessels Pretorius being appointed President. In the following year Pretoria was chosen as the seat of government and Potchefstroom as the administrative capital, but the Lydenburg, Zoutpansberg, and Utrecht burghers held aloof from the arrangement. In 1860 renewed efforts were made to induce the settlers in these districts to ratify the Union, but it was not

until 1864, and after bloodshed, that all were incorporated, Pretoria became the sole Capital of the South African Republic, and the last eddies of the much disturbed Great Trek subsided.

Historic Pretoria.

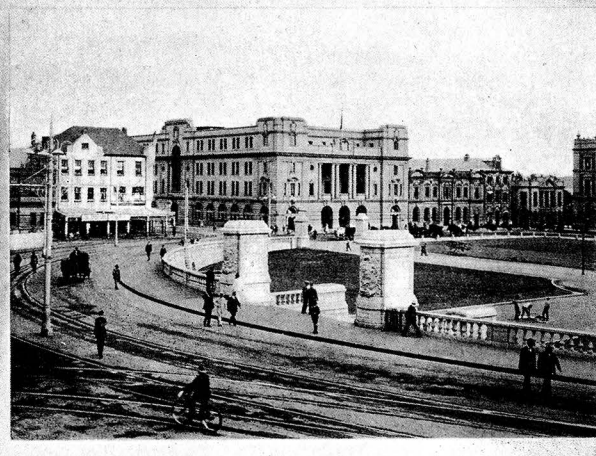
CHAPTER III.

THE past of Pretoria has in a way been as romantic and the architectural growth in some respects almost as astonishing as that of neighbouring Johannesburg; but in the early days there was little to suggest this destiny. The town, though the Capital of the Transvaal, was a very modest one in 1864, when union between the Transvaalers was established. Indeed, Pretoria was the merest village. It contained only about three hundred white inhabitants. Building material was costly, money scarce; and the houses, hardly three score in number, were consequently small, squat, and unimposing—too few in number and too scattered to form streets, too poor in structure and scant in conveniences to afford much comfort. Mud floors, and mud walls that softened and caved and fell under the summer rains, were common; the sanitation was primitive, and of municipal services there were none. Such, in an age when water-borne sewerage and gas installations, trams and railways were common elsewhere, was the principal town in a country destined to be proved one of the richest in the world.

It was a pioneer town of small pretensions, yet a town not without its attractions. If there were little animation and less kerbing on its paths, if no fine buildings graced its embryo streets, there was at least the minor compensation that the view of the natural surroundings was unobstructed, surroundings not perhaps strikingly impressive in their grandeur, but certainly pleasing and inviting in their picturesqueness. No mighty mountains held the eye; no stately river or mystic woods or tended parks. But the hills, though small, were during most of the year green and soothing; the valleys were wooded and watered and filled with game; the grassy plains were wholesome. The setting, in short, was attractive. It was a setting than which no finer had been encountered by those who had come from the Cape. The climate was healthful, at times even delightful; sport was abundant; and existence, if now and again monotonous and even a little objectless, was on the whole so enjoyable, being unconventional and healthy, that in after years many meanwhile acquainted with the best elsewhere often looked back with longing to the Pretoria of the later sixties.

As a village the place had on the whole been delightful; as a capital "City" it was at times destined to be disappointing. The period of transition, during the time the place was neither village, town, nor yet fine city, was especially trying. Growth was slow. What little prosperity had been attained fluctuated, waned, and then threatened entirely to disappear. There was no stability. This, under the circumstances, was almost inevitable. There was nothing to give an impetus to development; nothing to sustain even what development had taken place. Minerals, both

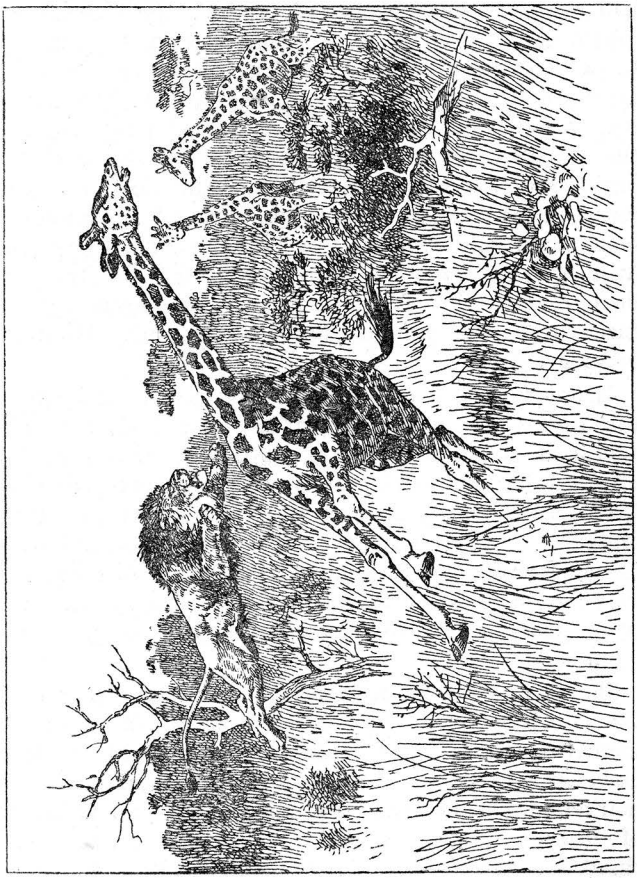
JESS COTTAGE, PRETORIA.
(The Scene of Rider Haggard's Novel.)



CHURCH SQUARE

CHURCH SQUARE.

Plate XIV.



". . . fang and claw no longer prey."

precious and base, the country had in abundance ; and the farming potentialities were good. But the minerals had not yet been discovered, and in the absence of railways, markets for farm produce were too remote to be profitably catered for. The Boers, as a nation, are essentially a pastoral people, and ostensibly farming was the business of the community ; and catering for the farmers' domestic and political needs was the business of the town. But though the Boers all held farms, there was little farming, demand for produce being low ; and as there was little farming, there was little spending power—little money for the traders, little revenue for the officials. It was necessary to turn to some additional means of support. Hunting became a trade.

It was a trade after the Boer's own heart. Inheriting the disposition which in earlier days had sent his ancestors, the voortrekkers, into the unknown, he retained the old roving instinct, was susceptible to that peculiar South African visitation known as " trek fever." Few so well fitted as he for the frugal, arduous, danger-fraught, dexterous, exciting life of the hunter. Few so inured to hardship, so calm in face of danger, so patient amidst obstacles, so callous to personal pain.

In those days hunting paid. Game was plentiful. The elephant still roamed the country in herds of mighty tuskers. The feather of the wild ostrich, however inferior to what is now sold, found a ready market at a time when the highly technical industry of feather farming had hardly been started. The rhinoceros and giraffe yielded valuable hides ; the horns of the various antelopes fetched good prices, and better prices when resold for the adornment of Parisian salons

and London clubs. The business of hunting, therefore, gradually grew, became an important source of income, and from time to time lured its devotees further and further afield. They penetrated the malarial swamps of the far interior, were familiar with the natives, fauna, and general conditions of Central South Africa, and visited the Victoria Falls. But except around the camp-fire, where a gesture or a grunt conveys much to the initiated, little was said of these things, the Boer of that day being a man of action rather than of words, a man of wide sympathies but limited vocabulary, capable of feeling but not apt at describing what he saw.

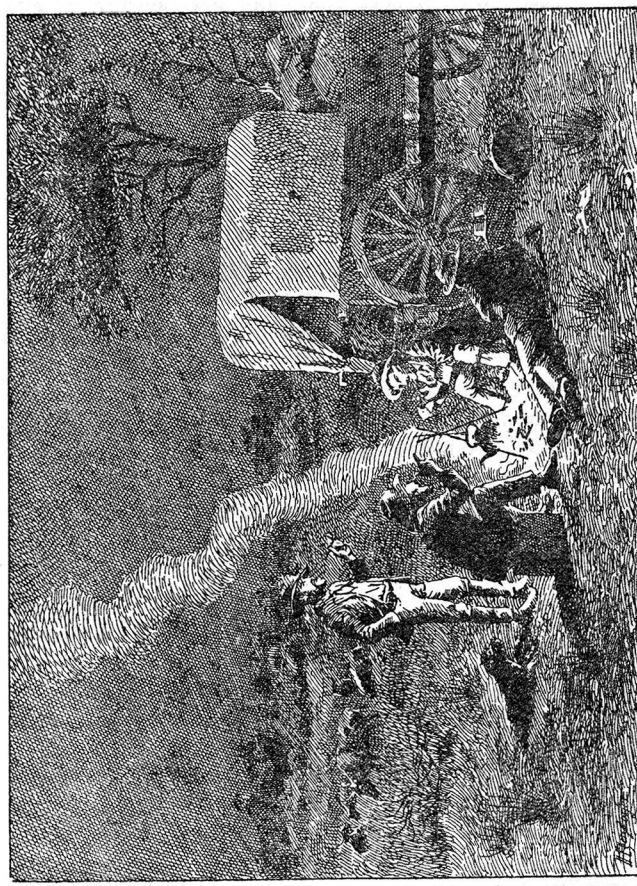
In such wise the knowledge of the country grew, and the life of the Republic was eked out. The quantity of tusks, hides, skins, horns, and ostrich feathers brought to Pretoria for exchange was enormous ; and a feature of the bartering between the hunter and the storekeeper was the almost entire absence of coin. There was, as a matter of fact, little money in the Republic. For the average individual, the farmer and the hunter, there was little use for it, so simple were conditions, so remote the entanglements of more complex societies. Theirs was the simple life. Arcadian was their system. Were a commodity purchased, its equivalent in some other commodity was given in exchange. The burgher buying a length of calico, a pocket of coffee beans, or a set of wheels for his wagon, paid for his purchase a measure of grain, a number of ostrich feathers, or a consignment of ivory, hides, or skins, as the case might be.

These trophies were the only Transvaal products that would bear the cost of transporting. They were therefore the only exports, being sent principally to

Natal by ox-wagon, and then distributed to the eagerly waiting world, which had nowhere a hunting field like that in Africa. And in return the outside world supplied the Transvaalers with sugar, coffee, and cloth.

Thus arose that traffic which some day will no doubt have its epic poet to sing, in a style becomingly elevated and heroic, the comedies and the tragedies of conveyance by ox-wagon. The days of South African transport-riding, like the old coaching days of Britain, had a picturesqueness of their own, but are now gone. Along the highways, to centres such as Pretoria, Johannesburg, and Barberton, the crack of the ox-whip, the cries of the naked, sweating, odorous native drivers, the rumbling of the heavy wagons, are now seldom heard. Railways carry all, and the romance has departed from South African transportation. No longer, in the intense blistering sunshine, do the plains shimmer with the dust from many wheels, or in the close and sultry night do the camp-fires glow around the outspan. No more, in the keen and fragrant dawn, does the subtle perfume of the veld assail the nostrils of cosmopolitan hundreds—adventurers of all kinds, good and bad—prospectors, speculators, storekeepers, gamblers, ruffians, tenderfeet, ne'er-do-wells, and what not from the world's ends. No longer do the placid, slowly plodding teams wear out their lives to connect the Transvaal with the world. But in the seventies it was different. Ox-wagon was the principal mode of conveyance. All goods were carried by it; and twice or three times a year every rural family took to the road, and in the tent-wagon travelled, sometimes for hundreds of miles, to celebrate Nachtmaal.

The bartering trip from Pretoria to Natal and back occupied from two to four months, according to the



The Outspan.

state of the weather, of the grazing, and of the veld track which was oftener than not a quagmire or else a dusty thing of singular annoyance. The dry season was usually selected for transport-riding, but was not always convenient. When in the rainy season the wagons sank to the axles, they had to be dug out, sometimes several times a day. At flooded rivers they were sometimes delayed for weeks. Travelling was slow, but by no means monotonous, because for mutual protection the wagons usually went in convoys, and there was no knowing at what moment the transport-riders might have to fight for their lives—either in the hunt against lion or elephant or in the dawn against native attack.

So matters went on for a time. But evil days were at hand. In a few years the hunting trade died out, game becoming scarcer and scarcer in their former haunts, then almost completely disappearing, slaughtered or frightened north. The prosperity of the Republic waned to its former level; farming paid less, trade was as slack as ever. A railway was essential to development. With this idea President Burgers visited Europe to raise sufficient capital for a line between Pretoria and Delagoa Bay. The line was not completed till many years later, when the least expected of all romantic destinies—that of gold-supplier-in-chief to the world—had befallen the Transvaal. Meanwhile the outlook was gloomy and darkened when, on the President's return in 1876, the Bapedi natives rebelled. As strong a force as the resources of the country afforded took the field, but was unsuccessful. There was no money in the Treasury, no assets in the country on which to raise the wherewithal to extend military operations. The country was suffering from depression

Discontent was rife, counsels were divided. One section of the burghers desired outside aid, even annexation; another section counselled delay. No course required less effort than that of doing nothing while events turned themselves, and as that course was adopted it was perhaps unreasonable of those who urged it to quarrel with the turn events did take. The natives remained a menace to the Republic and an incentive to natives in adjoining territories. So in 1877 the British Government intervened. Sir Theophilus Shepstone, accompanied by only a small troop of mounted police, hurried to Pretoria and annexed the Transvaal. Without bloodshed or ostentation, the flag of the Republic was lowered and the Union Jack hoisted in its place. Some protested formally, others concurred; and so the voortrekkers, who had suffered so much for their independence, found the burdens of state too much for them, and by sheer force of circumstance became British subjects again.

The Zulus, however, had an old boundary grievance against the Transvaal, and on the annexation of the Republic transferred the dispute to Britain. It was an unreasonable claim, and, being dismissed accordingly, war resulted. The peace finally arranged with the Zulus upset the Basutos. British forces sent to subdue them met with little success. Hostilities rapidly spread towards the Transvaal. And so, from one cause and another, Pretoria became a garrison town and the centre of quite an official community.

It was a different Pretoria to that of the sixties. The awkwardness of early growth had been replaced by something of symmetry. The town had grown

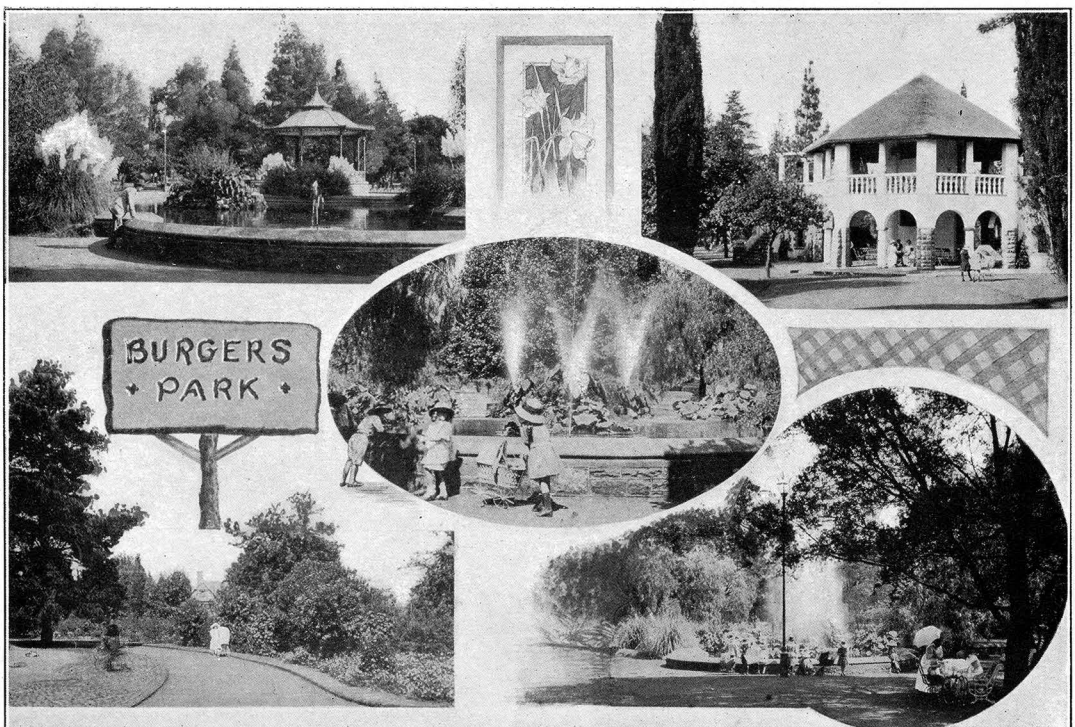
pretty, its amenities had become polished. Streets had been evolved, and each street was bordered by delightful gardens. Rose hedges separated the houses, and the houses stood in spacious grounds, in gardens where the violet and the honeysuckle ran riot with the rose and lent to the town a colour and a fragrance wholly charming. Cool shady orchards gave relief from summer heats, and down each sidewalk crystal-clear streams were led from the fountains.

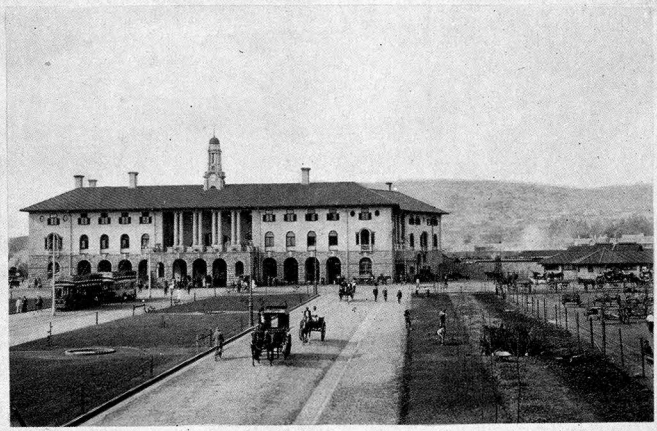
And the environment, like the town, was pretty Around, on all sides, lay the low and verdant hills, dominated by the bolder outline of the blue and purple Magaliesberg; and the Aapies, though a small and turbid stream, flowed through many a cosy picnic glen.

The population, too, had increased to about 4000 and had grown more cosmopolitan. Added to the Boer element were many English, Dutch, and Germans. The patriarchial hospitality, kindliness, and manly worthiness of the older population had been augmented by the vivacity of the new-comers, among whom was found much of general culture and social accomplishment; all of which added to the gaiety of the town, a gaiety the more infectious for its novelty, and the more novel for its peculiar setting. Theatres and other places of amusement were, of course, absent, and nobody went to the coast for the summer, the coach being tedious and expensive; but there was no lack of recreation and pleasure—balls, dinners, and garden parties for those in the whirl; picnics, alfresco concerts, and mild shooting for all.

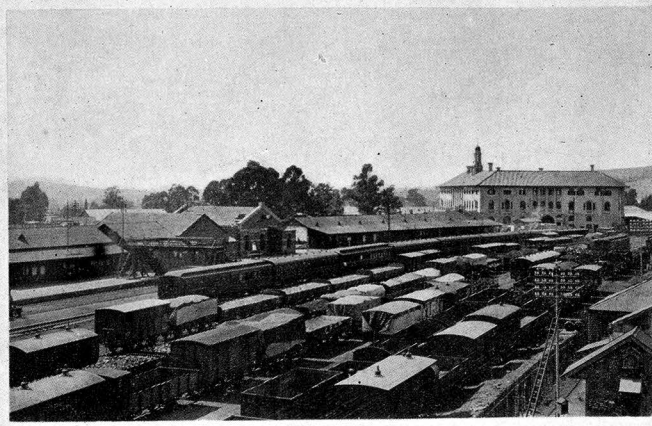
Whatever of strife the outside world suffered, the presence of the garrison assured the peace of Pretoria; and the burgher, in his wide orchard, beneath the shade

Market Square.





NEW RAILWAY STATION.



OLD STATION YARD.

of the fig and the walnut tree, though he might shake his head at these newer ways, at last found that concrete quiet and security, if not the abstract independence and contentment, for which he had sought and suffered so long. For whatever the political aspect of the situation, it was a pleasant and prosperous era for the town. Under the aegis of Britain, confidence returned. Money was again attracted and, by the garrison and newly arrived civilians, freely circulated. The farmer had a market at last. There was work of some sort for all. Living was cheap. And so for a while fortune smiled on Pretoria.

The Basuto war was long-drawn, and the continued occupation of the Transvaal by the British became irksome to a section of its former rulers. More money was in circulation, trade had improved ; but it was for independence that the Boers had laboured, and it was their independence, whatever its cost, that many of them now began to desire back. Deputations to Britain were sent without result. An appeal to arms was decided on. A small commando at Heidelberg issued a declaration of independence, and towards the end of 1880 hostilities commenced.

Potchefstroom, Rustenburg, and Lydenburg, as well as Pretoria, were garrisoned by the British. In Pretoria itself martial law was proclaimed. Those whose profits depended on or whose sympathies were with the British remained. Those who thirsted for a return of the power they had tasted, who forgot the ills of the old régime, or who in sheer and perhaps mistaken patriotism at any cost desired the country back under the old régime, sided with the burghers and were allowed to leave.

The town settled down to withstand a siege. It lasted three months. A cordon of armed burghers, not strong enough to attack, but able to cut off the town from the country generally, lay around Pretoria. Further afield the Boers under General Joubert were doing valiant deeds. In rapid succession the battles of Laingsnek Bronkerspruit, and Majuba were fought. In 1881 the Transvaal was handed back to the republicans, Paul Kruger becoming President and continuing in that office until, in 1902, the Transvaal finally became a British colony.

As usual after almost every war, a period of depression followed the events of 1881; as usual in South Africa, when the outlook seemed darkest it brightened. Gold was discovered in payable quantities at Barberton, and by 1886 in undreamt of quantities on the Rand. This changed the position, and a development of the erstwhile languishing state followed, so romantic and so rapid that it has hardly a parallel anywhere. People of every nationality flocked to the Transvaal from every corner of the world. From the somnolence of Devonshire lanes and the roar of London streets, from the pits of Cornwall, the crofter's Highland patch, and the Irish homestead; from Indian heat and Russian snow; from gay Parisian boulevards, Continental spas, American backwoods, and the sampans at Chinese river mouths; from ducal mansion and city slum; from the barrister's bench and the coster's barrow; from pulpit and from bar saloon, they came, all classes and conditions of men. Yet all formed in the same primary mould—all in the end having the same passions and ambitions—all yielding to the potent lure of gold.

On every side there was feverish bustle. The weak and halt jostled the strong and hale: in search of fortune and adventure, or both, and health. Jew and Gentile, believer, unbeliever, and sheer pagan; white, yellow, and black; on foot and in coach, in transport wagon, private conveyance, donkey cart, crowded the roads that led to the gold. There were found the footsore, friendless, and forlorn, as well as the sleek, the well financed, and the exultant.

At first Lydenburg, then Barberton, and then with a hundredfold intensity the Rand, attracted. Of the

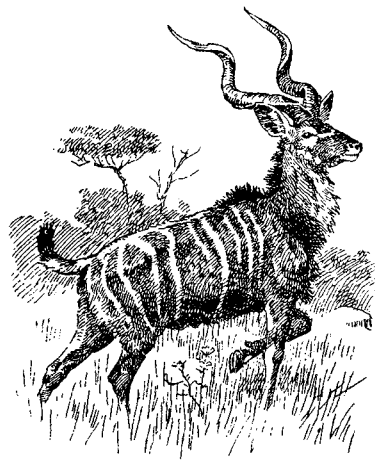
The Prospector.

three fields the Rand was, of course, by far the richest, but the mining around Barberton was in many respects noteworthy.

It was like a romance from Bret Harte. The scenery was magnificent, the mountains grand beyond comparison. Only to see the place was to be thrilled. The journey alone was enough to inspire the digger with hope; it was elevating, ennobling, sustaining. The tortuous mountain road winds between boulders and huge cliffs, alongside awful precipices. Mist-wrapped, or tinted in all varieties of gorgeousness, range upon range of mountains extend into the distance. Tropic trees and ferns and creepers fill the gulleys. Beautiful waterfalls pour down in cascades. For nine miles the road ascends the mountain side. On top is the Devil's Office. It is well named: the country around is extremely wild. Below, completely surrounded by peaks, the De Kaap Valley lies, called by the natives the Valley of Death. Opposite is the little town of Barberton.

In such surroundings, amidst so much natural nobility, the diggers cast their lot, erected their tin huts unashamed, plied pick and dice-box, made and lost fortunes, returned whence they came, or left their bones in hostage with malaria. On that beautiful scene the kerosene lamps of the ramshackle bar-saloon nightly shed their brazen rays, and in solitudes where only fever and silence had reigned the balls of the billiard table, the banging of the card-pack, the "tin-pot" piano, and the ribald song resounded, as nightly the bearded, sun-burnt, muscular diggers caroused. Then the boom of Johannesburg came and the exodus from Barberton commenced. Wealth in abundance

flowed into the coffers of the Republic. Projects long in mind were carried out. Roads were made, railways and telegraphs constructed, public offices and buildings erected, and general improvements effected throughout the country. It is from that era that modern Pretoria dates, and commenced its rapid and in many respects remarkable architectural growth and social, political, and industrial expansion.



The Modern City.

CHAPTER IV.

BY gradual steps, therefore, and through many vicissitudes, Pretoria evolved to the status of a city, and in 1910 became the Administrative Capital of the Union of South Africa.

It has to-day much to recommend it. But it is not a Manchester, a Boston, or a Cairo; not even a Johannesburg or a Capetown. It is not a populous manufacturing town, a centre of fashion, an historic health resort, a gold metropolis, or a world-famed spot of singular beauty. Within its boundaries there is not the throb of intense industrialism, the parade of a nation's gaiety, the crumbling monuments of an age when the world was young; no roar of mining batteries and incidental wealth; no mist-wreathed peaks and pine-clad slopes of a Table Mountain. Pretoria is not remarkable for any of these. To represent otherwise would be to mislead. It would even be unnecessary, for after all manufacturing, fashion, old-world historical interest, gold mining bustle, and singular natural beauty are not the only criterions of a town's claim to attention. They are not the only standards by which its importance

and attractions may be judged. A place may have none of these and yet be deservedly popular. It may, to take an extreme case, have the haunting glamour, the indescribable but all-compelling fascination that sets at nought all shortcomings, hardships, and trial, and lures again and again those who once have known it, as do the Sahara towns and villages, the Drakensberg Mountains, and the wilds of Rhodesia. Or a place may offer exceptional opportunities for founding comfortable homes, as does Canada; or it may have an enticing quaintness, as has Japan. Or it may have none of these characteristics pronouncedly, but all or many of them to a minor degree, so blended as to combine in an attractiveness as potent as any.

That, as we conceive, is Pretoria's claim to attention. It has not, perhaps, any single characteristic of outstanding prominence, but it has a number of characteristics which, together, make a strong appeal to the tourist, to the convalescent, to the investor, and to the worker. Pretoria and district offer what after all are the main considerations, means of comfortable livelihood and even ultimate affluence to the man with energy and a little capital, and many attractions to the tourists. It is rich in unexploited mining and farming resources. It is interesting historically and scenically. It has a history that gives significance and interest to even its unpaved back streets; a climate the salubrity of which would make even squalor and poverty endurable; a prettiness that, though not remarkable, is pleasing and refreshing. It therefore has attractions which, if they differ from those supporting the popularity of other cities, are in their way as capable of sustaining a high reputation.

Pretoria is, however, not a city of all the attractions, or even a finished city bearing comparison with leading cities oversea. To represent otherwise would be, consciously or unconsciously, to be ironical. Its well-wishers would be well advised to dissuade any such attempt. There are blemishes on the general fairness of Pretoria that no one can overlook, but the fairness of the place is such as can bear many blemishes and yet on the whole attract, and the imperfections, such as they are, are being gradually removed. Certain disadvantages the place still suffers, but the advantages so far outweigh the disadvantages as to make the latter negligible in a final balancing. Everything considered, Pretoria is a city in which a life-time or a holiday might be happily and healthfully spent Little more could be said for any place. Pretoria will therefore gain most not by being misrepresented, however good the intention, but by being shown exactly as it is. Not by heightening the light and dispelling the shadow, to produce a vivid but fanciful and misleading daub; but by so blending light and shade as shall give a faithful picture, revealing what is good, and not hiding what is otherwise.

Pretoria is on the whole not yet an impressive city, because it is a very young city, the days of which were once less palmy, the tendencies to expansion and ornamentation fewer, than now. Consequently small and humble dwellings, and small and even dingy shops, rear their fronts on even the better streets. There was little systematic tree-planting in the old dorp. Until comparatively recently there was no well-conceived town planning to harmonize the architecture of the place. Much that detracts is accordingly met at every turn: streets that lack balance; streets that

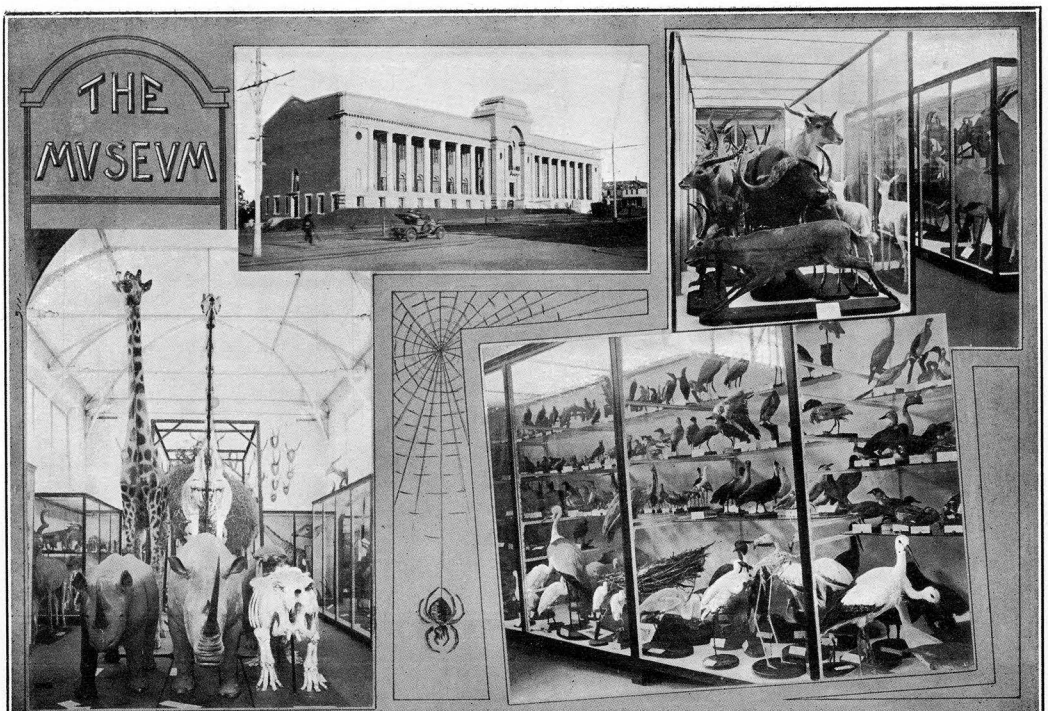
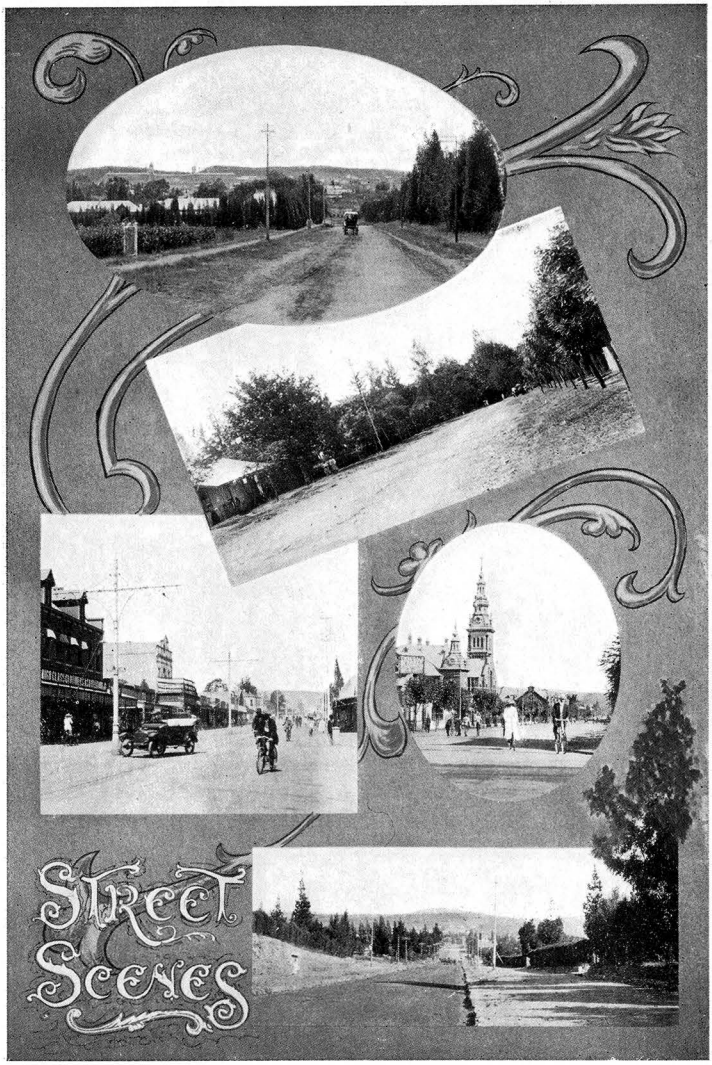


Plate XX.

Plate XXII.



are miles long, but in height seldom rise above the second story; rambling streets in which beautiful structures stand cheek by jowl with some pioneer shanty; gardens in disorder; trees that one might think were grown by chance, so irregular is their arrangement, so various and often unhappy the taste that guided their selection.

Trees there are in abundance, and beautiful gardens; but the trees are mostly clumped according to the unrestrained fancies of their planters, and such gardens as are attractive are themselves heightened in beauty by the proximity of desolate or unkempt spots, but in turn emphasize how far the scene as a whole is from the idyllic. There are no stately avenues, as in Stellenbosch or Kenilworth; no acres of consistently beautiful grounds, as in Parktown. In fairness to prospective visitors this must be admitted. But when it has been admitted the worst has been said. Suburbs such as Arcadia and Sunnyside, though somewhat new and straggling, contain many charming residences, have been consistently well planned, and promise to be delightful when older and fuller grown and the Jacaranda trees have had time to bloom. Streets like Market Street contain some of the noblest structures in South Africa, such as the railway station, the new library and the museum, to say nothing of the Union Building, which dominates the better part of the town. Nooks like the area around the Fountains and around the Zoological Gardens are wholly delightful. And the Square is beyond question the handsomest in the country.

The fact is that the aesthetic sense of present-day Pretorians is well developed and so well pursued that on all sides Pretoria is showing signs of rapidly growing

beautiful. Its natural environment and its developing prospects are such that in a few years it will be second to no South African city, not perhaps in point of size, but in architectural beauty. But to describe it as already a fine city of imposing streets, splendid suburbs, and a general floral magnificence is to be either a literary libertine—or a prophet.

However, the sterling efforts of the present régime have been so whole-hearted, so courageous in spite of disheartening obstacles, and on the whole so successful, and the natural winsomeness of the place is such, that criticism is disarmed. One admits that in many respects Pretoria is incongruous, but one is forced also to admit that there is a degree of charm in that very incongruity, and that when the city has attained its fuller splendour there may be more to admire, but less to love; more of the stately and superb, less of the picturesque and winsome. One therefore enjoys while one may the attractions found in few cities, but which in their way are as potent as any.

There is, for instance, a serenity in the atmosphere of Pretoria. The climate is nearly perfect. No doubt trying spells occur in summer, but so they do even in temperate Europe, and South Africans and Anglo-Indians have before now been prostrated by the heat of a summer day in London. Speaking generally, however, the Pretoria climate is delightful, never too cold and on the whole seldom too hot—a wholesome, exhilarating, bracing climate.

The difference in altitude makes a sojourn in Pretoria extremely beneficial as a change from Johannesburg. The air is a soothing mellow air, breathed without

effort; an air that, as it were, relieves the tension caused by higher altitudes and comforts the respiratory economy of a man. And as a change from coastal climates, the Pretoria air is positively tonic—abiding and irresistible in its recuperative effect. If only for the pleasure of feeling well, a trip to Pretoria is a sound investment. But, as we shall soon see, it is an investment that returns additional dividends, gives various pleasures.

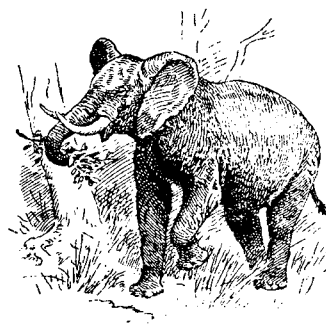
There are in Pretoria public buildings, private dwellings, shops, cafés, hotels, and other places of public entertainment as good as any in the country; and some are as bad. There are beautiful and there are unkempt gardens; there are tree-lined streets and streets almost devoid of foliage. A Pretoria street therefore presents pleasing or displeasing features, according to how one views it. In detail, examined closely, it is often unimpressive in many respects. Seen in long perspective, it is otherwise. Seen from the corner of Schoeman Street, for instance, Market Street would command hardly a second glance. Seen from the eminence on which the railway station stands, it is far otherwise. Especially at early morning or at sunset, the view is delightful if one can disregard the immediate foreground. Below, in the farness, lie the same hills, the same trees, the same buildings, that on nearer view prompted little notice; but, such is the illusion of the evening haze, the hills are raised to nearly Alpine height, the dome of Government Building is gilt, the church spires in the distance rise burnished from the glistening foliage—all etherealized by the sunset, all beauties heightened, all blemishes subdued by the mystic haze of the afterglow.

If, in contemplation of this scene from the railway, one turn to the left, it is to be disappointed : the foreground is disreputable and the distance indistinguishable. But to the right it is far otherwise. It is like a slice from an Irish scene : low emerald hills and on their flanks red-tiled villas girt with gardens.

There is in this mixing of the urban and rural something wholly delightful, something peculiarly Pretorian. One is in a city and yet, as it were, in a rural backwater. In large towns elsewhere the consciousness of being in a town is continuous ; one enjoys the advantages, but suffers the disadvantages, of town life. In Pretoria it is otherwise. All the conveniences, all the comforts of a well-appointed modern town are there. Except for one dispiriting corner, Church Square would do justice to the modernity and architectural pretensions of, say, Brussels. But even in Church Square, in the heart of the city, there is something of rusticity. In that centre of official and commercial stir there is a constant suggestion of rural proximity. The green, lonely slopes of the Daspoort and Magaliesberg Ranges are quite close. One can feel that not far away the herds graze, undisturbed by the city's nearness. Indeed an air as of the countryside blows over the place. The square itself is fresh, clean, and wholesome as the veld from which it sprang, animated and bustling at times, no doubt, but on the whole quiet and peaceful, like a stately Spanish plazza during the midday siesta ; a soothing scene beneath a blue, calm, sunlit sky ; no smoke or dust or racket ; a delightful change from the average town.

Pretoria, to be properly appreciated, should therefore be compared not with what other cities are, but with what it was ; should be judged by its romance and

history, as well as by its appearance ; should be appreciated not for qualities common to other towns, but for unusual qualities in which the unvitiated and novel predominate. For Pretoria, though now up to date, has lost little of its pristine wholesomeness, retains suggestions still of those moving pictures of the life, actions, manners, and appearance of a pioneer people, white as well as black, whose like has now practically vanished from the earth. The Pretoria surroundings remain as alluring as when they attracted the voortrekkers, and the breeze blows as cleanly as once it blew across the kraals when the snipe rose from the marsh where now the city stands and the warriors, in greeting, reared lance and buckled shield as dawn heralded day across the breasts of the brooding Magaliesberg.



Tours Around Pretoria.

CHAPTER V.

ALTHOUGH the age is an age of travel, the art and object of spending a holiday on tour is comparatively little studied. In the main the tendency is to travel aimlessly, leaving much to chance; everybody who can afford it travels for pleasure, but comparatively few take the pains to extract the utmost pleasure from their travels. More and more they feel the need for occasionally leaving the familiar to seek change in the refreshment and inspiration of new scenes, new faces, new thoughts and habits, but do not sufficiently realize that the success with which this is accomplished depends as much on the temperament of the tourist as on the characteristics of the places toured.

As, therefore, the extent to which a resort will appeal depends largely on circumstances and the individual, it is unsafe to dogmatize about any place. Some people are habitually unimpressionable, unmoved, if not actually bored, by scenery and old associations, or at best susceptible only to what is urban and stirring. Others can enjoy themselves almost anywhere, having

the imagination, the quick perception, and the keen appreciation to find satisfaction in every experience, however trivial, provided it is new and contrasts with everyday routine experience. They find pleasure in the suggestiveness of anything that is strange, in the unfamiliarity of new places, new incidents, new sounds, new fragrances, colourings, and atmosphere—in the contemplation of nature away from the towns, in the peace of tranquil wayside evenings, in the allurement of voices that call from the veld.

With these reservations, and leaving tourists to decide for themselves what their predilections and capacities for enjoyment are, it may be affirmed that for those with the eyes to see and the minds to comprehend, there are several places in the Pretoria District which well repay whatever exertion or expense is incurred in reaching them. Situated at distances of from three to twenty miles from the city and reached by road or rail are such places as the outskirts of the bushveld, in the vicinity of the Crocodile River and Commando Nek; The Fountains, Wonderboom, Hennops River, Baviaans Poort.

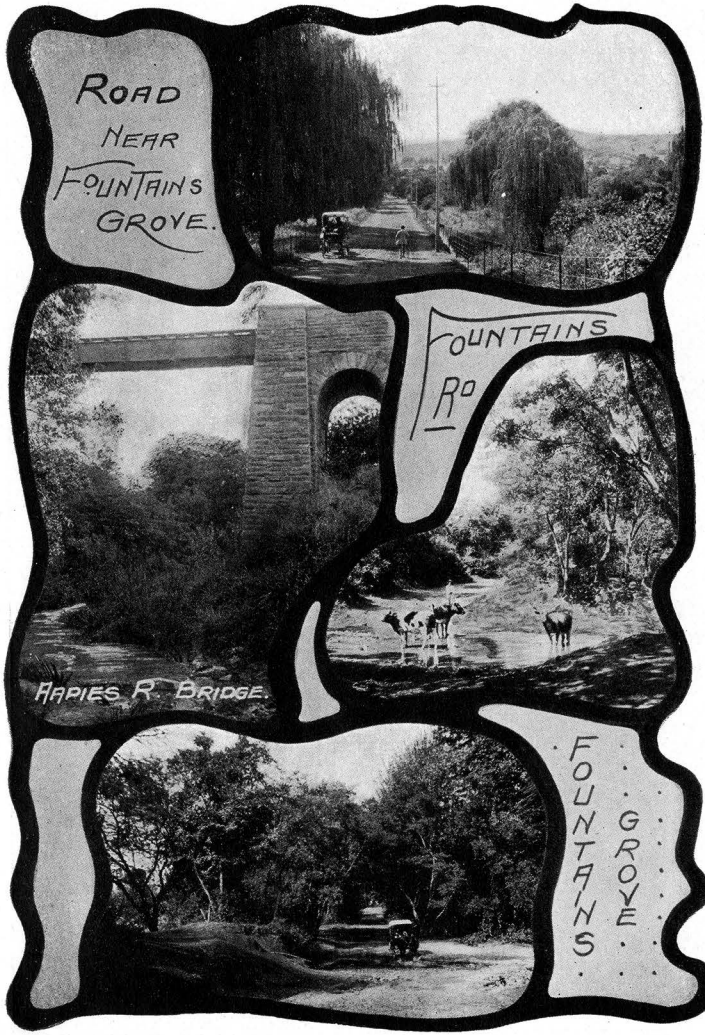
None of these places afford accommodation or are of a nature to warrant a prolonged stay, but each is worth visiting with the necessary lunch basket; each has some claim to attention.

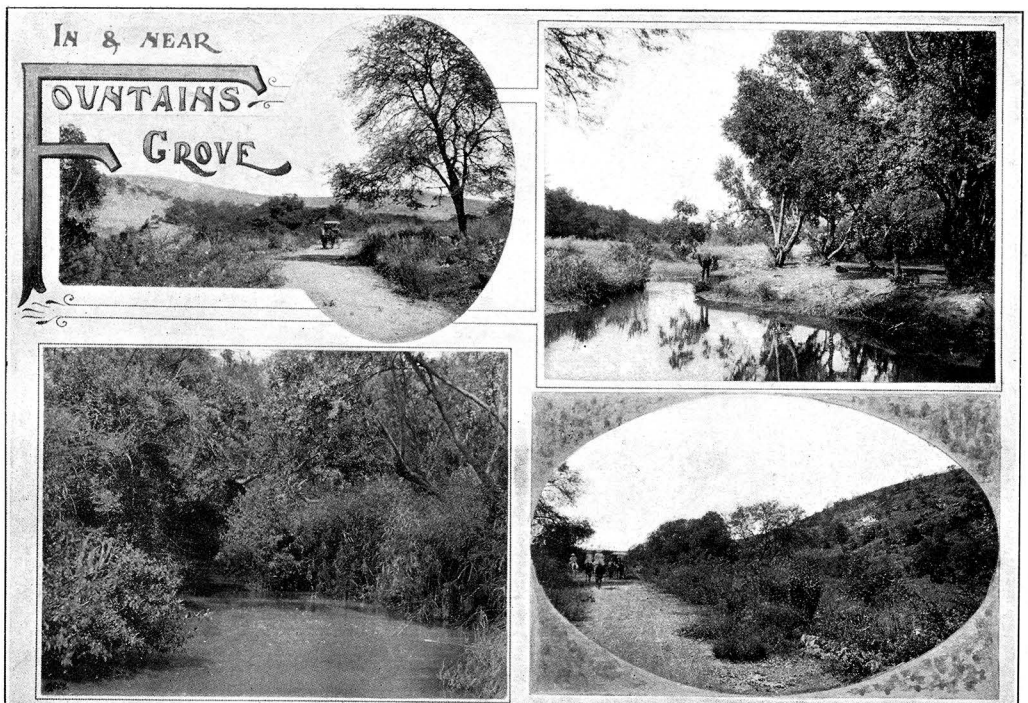
There is not about this Pretoria environment the almost endless variety found in the sea, mountain, and woodland attractions of certain coastal resorts. Indeed there is a degree of sameness about Pretorian resorts, and especially about the roads that lead to them, which at first is disconcerting. But gradually the attraction grows. There is just sufficient variety

to prevent *ennui*, but not sufficient to cause the restlessness prompted by attempts to stir the mind to fresh appreciations at every turn. The very absence of startling changes becomes restful and comforting. You feel you would hardly wish it otherwise. You are lulled into a state of semi-somnolence, irritating sensibility deadens, and for once you feel peace and contentment.

That these resorts are not as much visited as inferior resorts elsewhere is perhaps attributable to the bias of the interested or the injustice of the irresponsible, whose descriptions have been somewhat misleading because conflicting, and conflicting because either extravagant or inadequate. It has, for instance, been claimed that the scenery compares with any in the Transvaal, not excepting the mountainous glamour of Barberton or the sub-tropical splendour of the low veld: and as a counterblast it has been affirmed that the rivers are sluits, the ranges insignificant, and the plains and valleys on the whole uninteresting. The tendency has been either unduly to laud or unfairly to belittle. The result has been in the one case expectations few places could satisfy, and in the other case apathy: not because the attractions of the district, if justly assessed and temperately proclaimed, are on their own unbolstered merits otherwise than well calculated to appeal to visitors, but because of a certain insensibility to the fact that just as in human beings character influences more than appearance, so in tourist resorts charm appeals more than even beauty. There is an even natural beauty that leaves one cold; there never was a charm that did not stir. Excepting ephemeral colouring, elusive light and shade effects, and the glow of cosmopolitan picturesqueness, there is

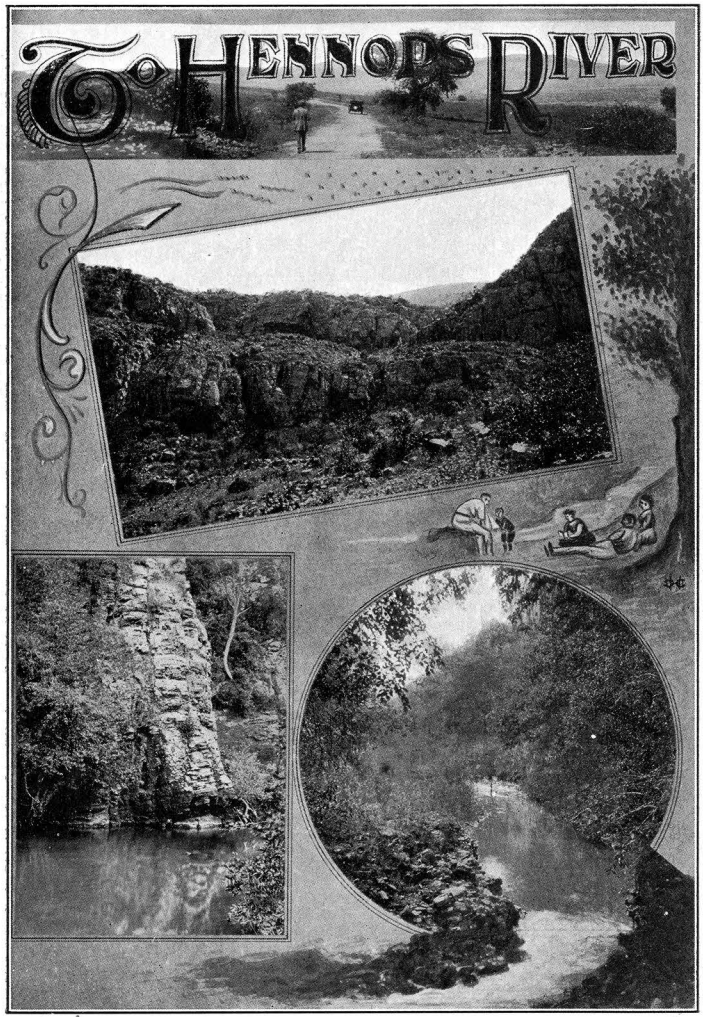
Plate XXIII.





HENNOPS RIVER.

Plate XXVI.



little or no beauty about Egypt; but there is a spell and a suggestiveness even for those unversed in history which is stronger in its appeal to the imagination, than any scenery or modern pageantry could be.

This is the claim for the Pretoria District. It is not without beauty, if rightly gauged; not the vivid beauty that astonishes one into admiration, but the subdued beauty that by its very quietness compels one's liking. But the district has charm rather than beauty; it is in many respects alluring, but its lure, properly understood, does not arise from rushing waters, towering peaks, or picturesque foliage. There is little that is impressive about Pretorian streams, little grandeur about the Magaliesberg, little sublimity about the grassy or even the remoter wooded plains. But there is about the Pretoria district, as there is about an indescribable perfume or a plaintive melody, a certain subtlety, a wistful something, a spell more vague, more intangible, yet more potent, than concrete beauty —a spell that stirs till you not only see, but for once in a while feel, feel sensations exquisitely new, experience a mood that is singularly pleasing. It is not perhaps happiness, but the emotions that constitute happiness when fixed in retrospect and looked back upon as remembrances. One realizes this when one has toured the district, more than when actually in it; for having returned whence one came, it is to be assailed by that loneliness even in cities, and that restlessness and longing even in urban repletion, which the veld, whatever its shortcomings and whatever its hardships, breeds in all who have known it, so that they return again and again, or live continuously in the hope of doing so, from the sickly air of cities to the tonic air of the wilds, from the leaden skies of the

North to the great sun-washed splendours of the South—to the South African veld, and not least of all to the veld around Pretoria and district. There those who lived the life of the veld found that success was proportionate to desert. The hardships and the reverses were many, but so were the compensations—the clean life, the swift eye, the clear brain, and subtle muscle, rather than the length of the banking account, ancestral prestige, or well-cut garments being the criterion of a man's worth. It was a natural socialism possible only in a land where a man's wants were simple, and, being simple, were abundantly provided. There the big game roamed in thousands, and the hunters, alluvial diggers, and transport-riders led lives of adventure. It was the home of the lion, the leopard, and the elephant; the land of the swollen rain-fed ford, the dusty trail, and the shimmering plain where the hot air quivered at noon. There, in the old days, death lurked on every hand, carried by most living things, from the lion in pursuit of the scudding giraffe to the mosquito injecting malarial. But still it was a land to rave about, a wonderland in which, while it lasted, the full joy of living was felt. It was a land etherealized when at evening the slender fingers of the setting sun thrilled over kopje and krantz, and the stately koodoo, the dainty impala, the bushbuck, and the minor antelope, like noiseless wraiths from other worlds glided in elfin beauty through the shadowy kloofs.

Such, in the summers of long ago, was the bushveld around the Barberton and Lydenburg Districts. Such, to some extent, were also portions of the Pretoria District, as one realizes when, having crossed the Crocodile River where it flows in an uninteresting phase about fifteen miles from the city, one traverses

the cutting in the low-lying range and, through Commando Nek, enters the silenced outskirts of the once teeming bushveld. The shadows come and go as then they did, and the sunbeams quiver through the perfumed dusk of the resinous foliage; but the actors are gone. They no longer outspan, those hardy pioneers of old, by the creeks and the water-holes. No longer does the evening lilt ascend from the digger's cabin or the embers of the dying camp-fires glow by the wagons. For the trekking, the hunting, and the digging days are over or devoid of adventure; the game paths are empty, the wagon road deserted, and the bushveld, as glimpsed from Commando Nek, is a solitude in which deep silence reigns. It is a sunlit, bush-clad, hill-girt land grown drowsy. A quiet restful land where nothing stirs save the leaves that flutter in the hot still sunshine. Nothing more vocal is heard than the lulling drumming of the tock-tockie beetle, nothing more vibrant felt than the rustle of the tall tambuki grass where a wandering wind sighs through it. It is a lonely, wistful land lost in reverie and veiled in hazy blue, a land of soft colouring and soft sounds, where evening, in place of the old-time stir, now brings only the whirring cadence from some partridge covey overhead or the mournful cry of a belated khoraan homecoming. Then the moon's white blaze pours on the empty veld and the wide-flung plains lie hushed.

Far otherwise is the place known as "The Fountains," three miles from Church Square. As Pretoria gradually grows into the populous, outstanding city it is destined to become, "The Fountains" will no doubt become its Hyde Park, where in the cool of the evening, beneath the willows and the soothing blue, under branches that arch above the avenues where the

diminutive river flows, society will take its daily outing by the turbid but not unpicturesque Aapies. The foliage is rich and pleasing, and the surrounding hills intensely green for the longer part of the year, and one can imagine them in the days to come crowded with villas and sweet smelling gardens.

The Hennops River, about fourteen miles from Pretoria, is a popular picnic resort. Not only the place, but the journey to it is pleasing, if not thrilling. One passes through a land of low green hills and verdant pastures. It is somewhat tenantless and lonely, no doubt, but has the charm of tranquil pastoral homeliness—cattle and sheep upon the hillsides and drowsy herd boys nodding in the noontide heat, with here and there little farmsteads dotted, and a golden glint upon the maize fields.

The river itself is unremarkable, small almost to the point of meanness and far from crystal-like; but it flows through an extremely picturesque setting—through a witchery of colouring, colour in the rocks, in the water, in the foliage, in the atmosphere: and where the water ripples musically, albeit somewhat turbidly, over the pebbled shallows, a sense of charm pervades, and one feels the place to be not perhaps outstanding, but a place such as Wordsworth may have had in mind when—

> "Pleased if some souls (for such there needs must be)
> Who have felt the weight of too much liberty
> Should find brief solace there as I have found."

But perhaps the quaintest and in a way the most insinuatingly suggestive place of all is Baviaans Poort, about fourteen miles by road from Pretoria. It is a place worth travelling further to enjoy. Excepting the mile-long gum avenue half-way, at Silverton, where

a small stream flows through a sylvan retreat, the country, until one reaches the hills, is flat and unexceptional, but far from uninviting. It is an exhilarating gallop across the plains, in the cool of an autumn day, under the magic of mighty wind-swept spaces; and an even more delightful journey by motor, on a dewy summer morning, when the early rains have set the grasses free, and on every hand mile upon mile of refreshing green stretches into the distances where the hills stand blue in the morning haze.

Then, leaving the road, one enters a cutting in the hills, and suddenly the scene is changed. The place within is wild and lonely. The hills themselves are comparatively low, but so abrupt and startling in their contours as to seem imposing, and so fantastic in their arrangement as to appear a little weird. But it is an inviting place on the whole, this one-time tavern of the monkey folk, especially when the shadows fall from the naked sun-kissed krantzes, and lie around the stunted bushes, and throw broad spokes across the little stream that babbles and calls, babbles and calls unceasingly, perhaps to those who once abode there.

General.

CHAPTER VI.

(1) THE MUSEUM.

OFTEN, no doubt, a museum is regarded merely as a tedious array of exhibits: musty smelling and possibly instructive to the interested, but conveying little to the uninitiated. Rightly regarded, however, it should be, to those with a little imagination, a place of recreation and learning, almost as entertaining and certainly as instructive as a theatre. For a museum is history in the concrete, the record of man's achievement; in it are the trappings of the past, somewhat dingy at times, perhaps, and even inanimate, but potent with significance for those who can take and develop a hint. What, for instance, could be more stirring than the train of thought aroused by the contemplation, in the Pretoria Museum, of the 2000-years-old mummy suggestive of an age, of customs, peoples, and scenes when the world was young, of splendours and mysteries now unfathomable, of cities and nations dead, buried, and forgotten beneath the modern cities and nations of ancient Egypt!

A Venetian sequin or a Spanish dollar, what romantic adventures were not theirs, from the days when the Cape was the tavern for all who fought, trafficked, and intrigued between East and West to the day when these relics found a resting place in Pretoria!

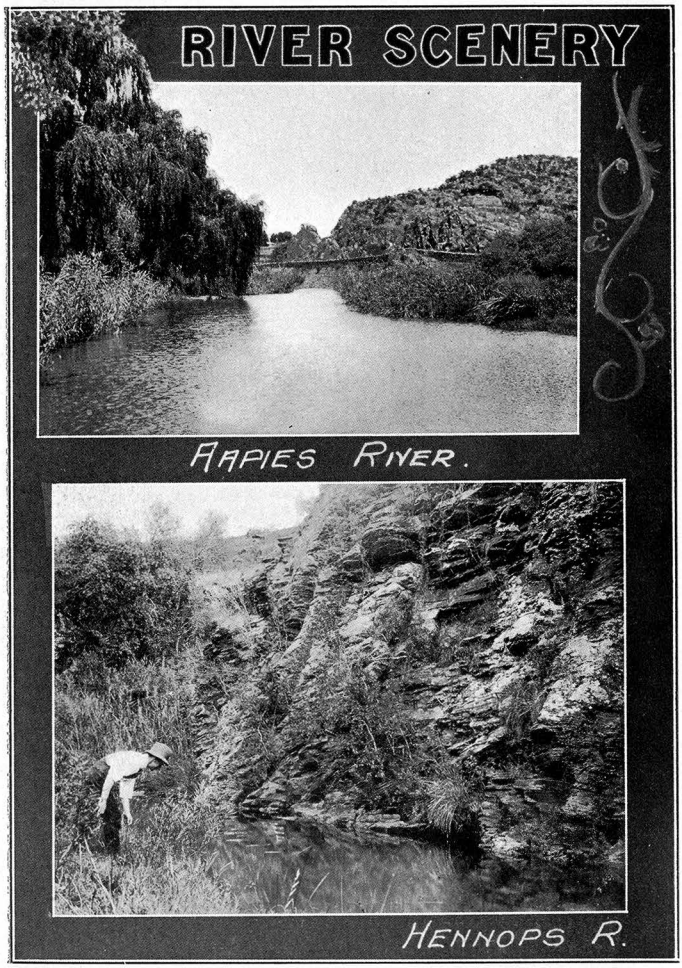
Or to come nearer our own history. Is there not poignant suggestiveness and even tragedy equal to that of any staged drama in contemplating the crude but lovingly, laboriously-engraved little tombstone wrought and erected by some lonely saddened survivor to the memory of the first English lady who found an exile's grave in the remote wilds of Matabeleland nearly a hundred years ago?

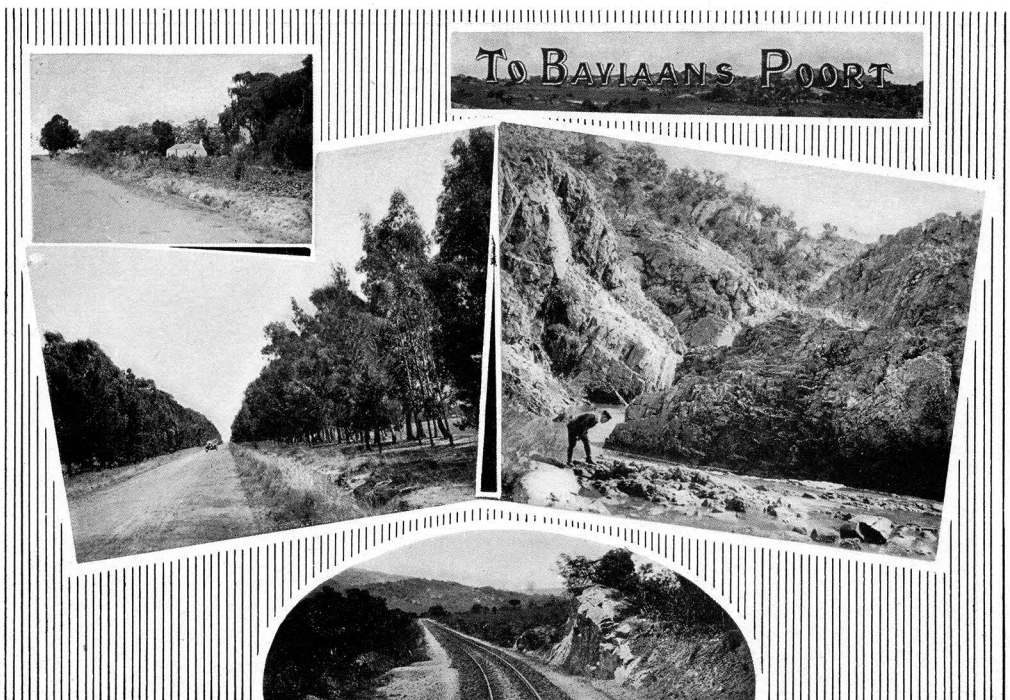
One visualizes, too, times that were passing strange, and to a peaceable, security-loving generation almost incomprehensible, when musing on the history of the wonderful cannon made almost without facilities by the voortrekkers, and the implements of destruction used by the Dutch East India Company, maybe against some Oriental slaver or European buccaneer. How many hopes, how many fortunes, how many lives depended on the efficacy of these rude weapons? Could they but talk, what acts of heroism and devotion, what tragedies and comedies, would stand revealed? One can only surmise, but in the surmising there is much that is profitable and entertaining, the only cause for annoyance being that the collections, though good of their kind, are far from complete and their histories far from being thoroughly known and fully proclaimed. For these omissions our ancestors are to blame, but they had other and more pressing things to think about. The moral is, however, plain: in a country like South Africa, where so many of the old

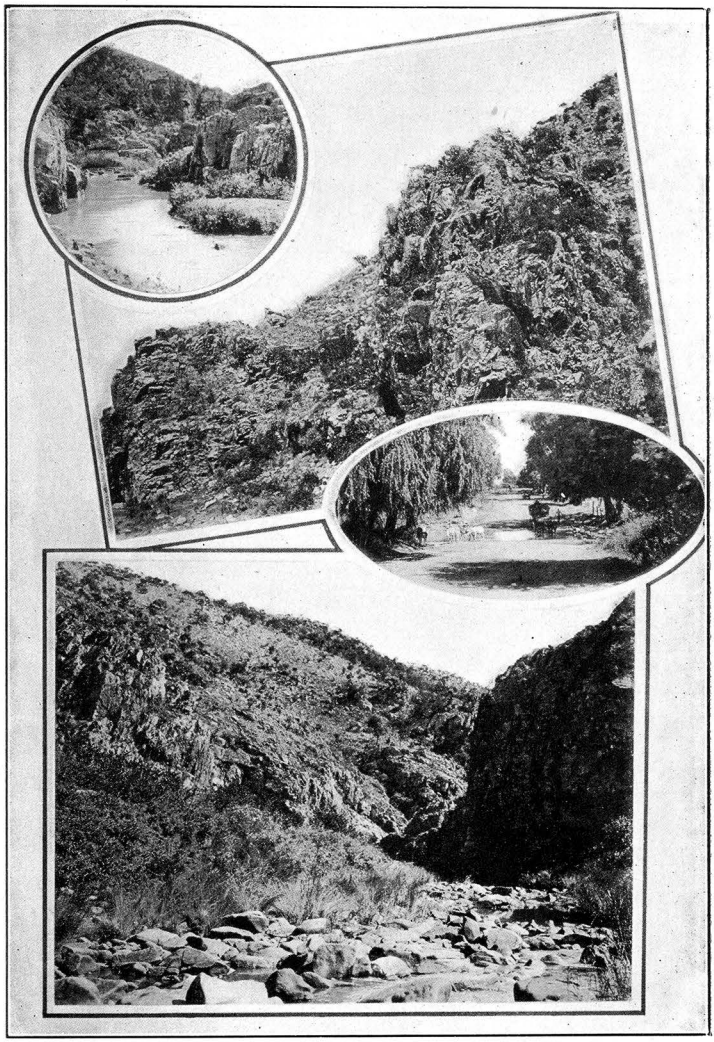
conditions and implements were so novel and are so rapidly passing away, it cannot but be in the interest of all, and therefore should be an object of all, thoroughly to support national institutions like the Pretoria Museum by saving for and presenting to the museum everything worthy of such a destiny, or in assisting those who do this by supporting the museum and taking a live interest in it. It costs so little either in effort or money ; it means so much for future generations, and even for ourselves. It is desirable, so that those not exclusively occupied by the mundane may for their refreshment and enlightenment occasionally step from the modern everyday world into the dim cloisters of the past, there in imagination to live for a while as our forebears lived, and see spread out, in a narrow compass, within high walls and a roof, all that is redolent of early South Africa—of the Bushmen and the Hottentots and the game that roamed the veld, of the Kaffirs when they lived in barbaric splendour, of early settlers on pioneer farm and in pioneer town : the life of the kraal and the camp and the mining hut, of a time when South Africans were in many respects rougher and hardier than now, but in other respects more romantic and more picturesque. It is a national work, this conservation of what is of South African historical interest : a work in which all should help.

The Pretoria Museum was commenced in 1892 with a small collection of objects of national interest. Some years later natural history specimens were added. In 1896 faunistic work was started. Since then the object has been to study the flora and fauna of South Africa in general and of the Transvaal in particular, and to make the collections as complete, as instructive, and as generally interesting as possible.

Plate XXVII.

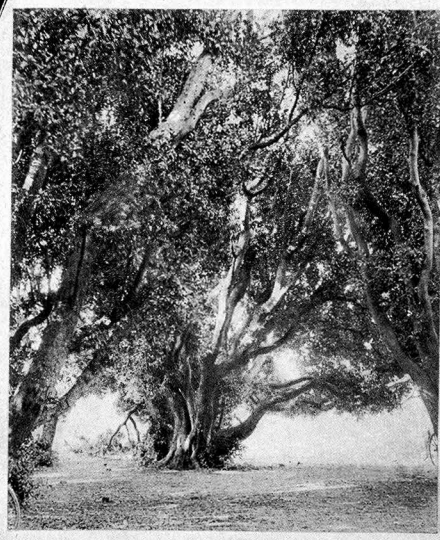


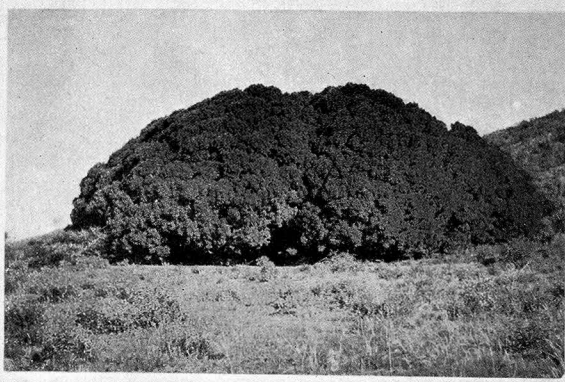




BAVIAANS POORT

THE WONDERBOOM





The collections at present accessible to the public are exhibited in six halls. The first contains mounted South African birds, their nests, and eggs; the second and third hall contain South African mammals, reptiles, amphibians, and fishes, as well as exhibits of the more important internal and external parasites which are capable of causing so much damage to the live stock and crops of farmers. The fourth room contains what is perhaps of most general interest—the historical and ethnographical collections and coins, and the other two rooms foreign mammals and birds.

An important part, indeed the greater part, of the historical and ethnographical collections is not on view, being stored away owing to want of room in the present premises, but when the new premises in Market Street are occupied this will, of course, be remedied.

The entomological collections are also inaccessible to the general public for the present. Over 125,000 South African specimens have been named and classified, but want of cabinets and space prevents the scientific classification of thousands of exotic insects. The important herbarium, too, is inadequately housed, and the reference library attached to the museum scattered variously. No doubt this all detracts from the general usefulness of the institution, not only because many valuable specimens are for the time being stored away, but also because even the specimens on view are in many instances so huddled through want of space that their significance is dwindled. This will, however, be altered when the palatial new building in Market Street, which is to house the museum for the future, is taken over. Accommodation there, if not ample, will at least be sufficient; and it may confidently be

expected that with such improved housing the exhibits will be displayed to proper advantage and catalogued and classed so as best to facilitate inspection and study.

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(2) THE PRETORIA ZOO.

Of South African zoological gardens that at Pretoria is probably the most charming and the most interesting. Few places are better worth visiting. The grounds are extensive and beautifully laid out, and accommodate a collection of animals that is both large and varied. Just to saunter through the flower-brightened paths, or to rest in the shade of the silver-oaks and palms, is distinctly pleasurable; and at every turn, in the cages, paddocks and ponds, something to instruct or entertain will be found.

The zoo is a miniature world, in which has been gathered something suggestive of nearly every corner of the outer world. There every rank and grade of the animal world live, if not in amity, then at least in toleration. There the aristocrat and the proletariat from the forests, mountains, rivers, plains, valleys, and seas of the known earth live in a kind of socialism, all wants being provided and existence rendered effortless. The zoo is the acme of cosmopolitanism—a true democracy, where artificial barriers, save in the matter of bars and wire netting, have been levelled, all natural fears and preying instincts so far allayed that the deer suckle their young undismayed by the roar of the adjacent lion, the doves, knowing the efficacy of netting, coo openly in view of the eagle; there the leopard gambols with the baboon, the vulture preens the wing of the Nile goose and, disregarding dietics, takes a

friendly interest in the goslings.* Food and comfort come automatically, and the incentive to kill is therefore largely reduced.

The environment of the Pretoria Zoo is so beautiful that thousands of visitors are attracted yearly, and so admirably adapted to the widely differing temperaments and needs of the various denizens that they make it their home and, with certain limitations of course follow their usual avocations, chewing the cud of utter contentment, bringing forth and rearing their young, basking lazily in the comforting sunshine, and dreaming, no doubt, of the jungle they once trod or the seas they skimmed. Each cage and enclosure is a lattice, so to speak, through which, with a little imagination, one gets a glimpse of luxuriant forests, snow-capped Himalayan peaks, mighty rivers, lonely African plains, sun-scorched deserts, and sparkling seas.

Blue, yellow, and red macaws flash their gorgeous plumage in the sun-flecked shadows of the entrance avenue, and a parrot in green screams its "Hello!" to the visitor. Their surroundings are very different to those of their native haunt; but, perhaps because they have forgotten, they are a contented party. The overflowing seed dish and protection from kestrel, puma, and jaguar are perhaps some compensation for the absence of that lurid hot-house, their one-time home, where in places the Amazon flows six miles broad and forests sweep 3000 miles inland to the Andes. The tonic air and the brilliant sunshine of Pretoria are perhaps some compensation, even to an exotic bird, for the sweeping forests and tropic vapours where the palm, myrtle, acacia, and mimosa, gnarled by the centuries and shrouded by the heavy luxuriant climbers,

* "The next cage shows us a Cheetah and an East African Baboon, grown up together When one considers that a baboon is always looked upon as one of the most exquisite delicacies of a leopard's menu, one may really marvel at the absolute friendship of these two animals, who by their constant and funny play make one of the most attractive exhibits in the Gardens."—*Extract from Curator's Report.*

close their ranks so densely that beneath the tree tops, in the hot, miasmal atmosphere of the Amazon banks, day is a dim affair of faltering twilight and night an awesome pall of utter black. It is a distant and, one may suppose, an unregretted home, for on their Pretoria perches the macaws now drowse uncaring through the slumbering afternoon of the African summer and the Amazon parrot utters its scrap of English with something akin to pride.

The pond close by, among other denizens, contains a pair of seals. The day can at times be hot at Pretoria, and the zoo pond is often discoloured. One then pities the seals, taken from cool, wholesome, sparkling seas and dumped a thousand miles inland where even the smell of the ocean is denied them. But it is misplaced pity, for suddenly their affectation of lethargy vanishes and in a very whirlwind of admirable, if mistaken, zeal they swim, dive, and romp, with a gusto and dexterity sadly disconcerting to the other inmates of the pond.

Perhaps they, too, have their compensations, for though accustomed to congregate, especially in the breeding season, and though now isolated far from their kind (in what at best is an artificial environment sans ice floe, salt spume, dashing wave), the female enjoys the attractions of monogamy, and the old male, though deprived of the harem he would have had under the old régime, is on the other hand spared the necessity for continuously defending it from adventurous suitors and himself from unceasing domestic squabbles such as turn the natural breeding places of the seals into places of din and turmoil.

The bear den contains, among other interesting occupants, a denizen from the far-off Himalayas, who,

in the cool of Indian evenings, may have loitered once by the banks of the Brahmaputra. Honey, roots, and a little flesh formed his diet in those days and were sought in divers and widely differing places, ranging from the dry icy heights of the " snow abode " to the lower, hotter, and wetter regions along the great plain of Asia. His was the saunter from the aromatic pine slopes and keen air of the upper altitudes down to the palms, bamboos, tree-ferns, and orchids of the plains, where the sunbird, the vividly coloured trogon, and the beautiful kingfisher have their home with the cobra and the python, the tiger and the elephant.

The elephant is a companionable brute. For preference, rather than for protection, it wanders in herds, gambolling, when in jovial mood, with a lightness that, considering its size, is nothing short of wonderful, or lolling in the jungle shadows during the noontide heat, or bathing. The solitary female at the zoo, musing perhaps on such past jaunts, is inclined at times to be pensive, when, in the absence of water, she may be seen moodily squirting sand over ponderous shoulders. Maybe her thoughts are with the calf which, in happier circumstances, would be by her side amongst the plantains and the bamboos of an Asiatic home. But she is an amiable and gentle though a somewhat heavy dame, and whatever her thoughts or ambitions may be is inclined to sink them on the advent of a banana which she nimbly but courteously filches from the spectator.

The lion is, in a paternal sense, essentially a family animal. He attaches himself to one mate only and lives with her for life—that is to say, for her life, as instances are on record where, in the stress of hunger or wrath, lions have killed and eaten their consorts.

As a bachelor, too, he is in many respects sociable. He hunts with other bachelors until, under the influence of jealousy, discord ensues, when the weaker is killed and the victor, suing the lithe one of the contention, roars nightly in the wilderness till she, stirred by the pairing instinct, slinks from her family circle and not without a certain coyness joins her fierce-blooded suitor in some rocky fastness of their own, killing with him only when hungry or annoyed, rearing her cubs while her lord hunts for their food. And when family affairs have been eased and the young have been taught to fend for themselves, she joins her savage mate in social evenings ; when, as Gordon-Cumming has written, the roar of the assembled lions at the water-holes, in a unison that is extremely impressive, constitutes a nocturnal concert inconceivably stirring and grand.

There are two lionesses and a lion at the Pretoria Zoo. The elder of the former is somewhat aged, extremely brittle in temper, soured either by spinsterhood or confinement, her sociability so far destroyed that on a companion being placed in her cage she immediately broke his back.

The male, however, seems a placid animal, largely given to basking in the sun with a dreamy far-away look in his yellow eye, and a nervous, ceaseless twitching of his sinuous tail tip, as though in the farness he saw visions that stirred his slumbering passions ; or maybe some whimper or some whiff from the adjacent cage, in which his fierce mate suckled her newly whelped brood, may have roused his paternal feelings, stirred instincts connected with freedom, the plains, and the hunt.

Of Diana monkeys there are a pair in the zoo, delicate, refined, almost human animals from the fetid,

impenetrable, excessively rank vegetation of the Equator, where the mahogany, the teak, and the ebony grows, where the mighty Congo plunges in gorges and rapids, and the Arab slave raiders once had their loathsome strongholds.

So one wanders between cages, paddocks, and aviaries, seeing continuously something to instruct and interest, something to widen the horizon of one's outlook by reminiscences and suggestions. Of all the animals there, the hippopotamus is perhaps the most curious, a huge ungainly brute like some relic from primeval times, resembling nothing else that walks the earth to-day. He is a full-grown bull, exceedingly ugly and unwieldy, but capable of a passionate attachment to his native keeper, whose frequent admonitions appear to convey something to whatever understanding lies behind the absurdly small eyes in that wierdly ponderous head.

Though the cemented pond in which this hippo. spends most of his time is small and gives little opportunity for the dexterous diving and the perambulating on the river bottom in search of adventure, for which hippos. in their natural environment are noted, these deficiencies are no doubt made up for by the fact that the zoo rations are uncommonly good. Huge slabs of moistened mealie meal slip down his capacious mouth and are swallowed with the rapidity and ease of oysters down a human throat, the while the ridiculously beady eyes peer greedily for more, and the small flexible ears twitch alertly as though to catch some distant sound, some grunt, perhaps, to charm a lonely captive, such as in the vicinity of the Zambesi is nightly heard when the hippos. leave the water and walk the banks in search of food and gallantry.

To enumerate all the denizens of this zoo would be to take up too much space and the place would still be done less than justice. There are bisons from the American prairies, bears from Japan, pumas, leopards, and llamas; camels from the burning deserts and tamarisk-shaded oases of the Sahara; scores of different kinds of antelopes and birds innumerable, each single specimen of which is worthy of some individual attention.

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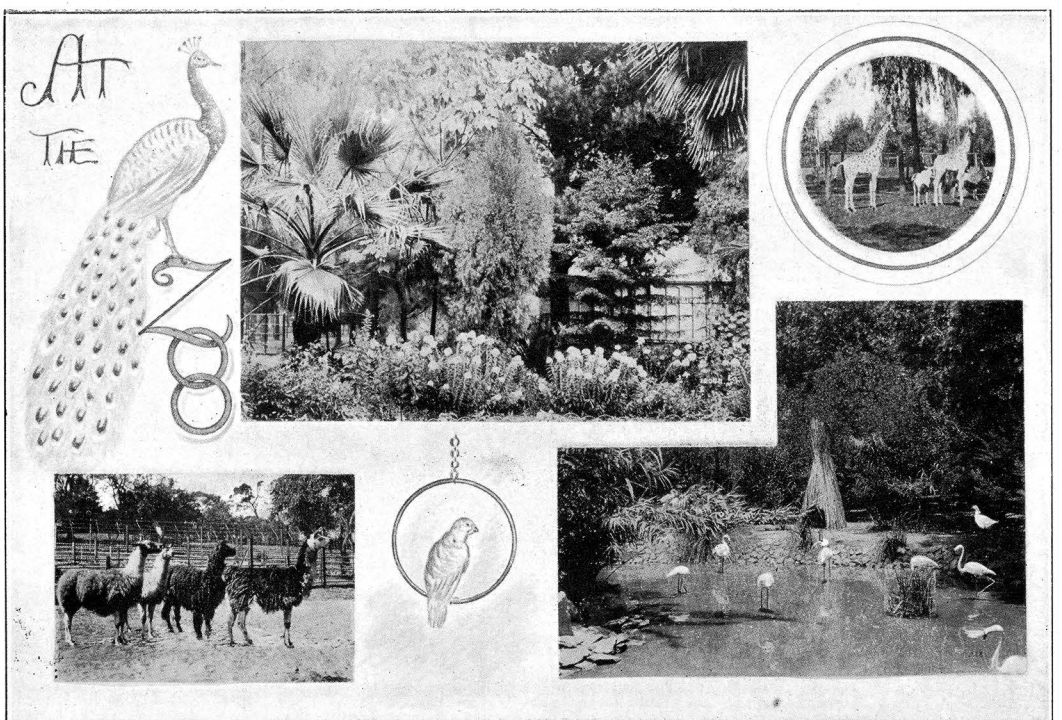
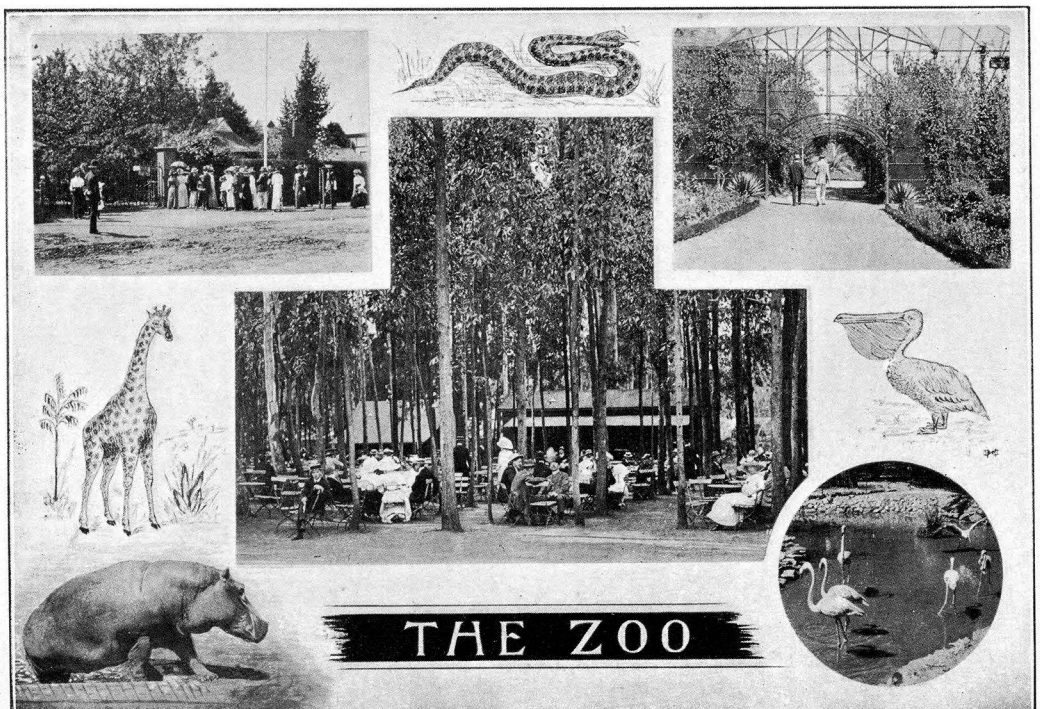
(3) THE LIBRARIES OF PRETORIA.

Of the numerous departmental libraries for the use of officials, to which public access is more or less restricted, the library of the Agricultural Department is one of the largest and most important. Other non-public, though not purely departmental, libraries are the Supreme Court Library and Legislative Council Library. The one library is lodged in the Palace of Justice and contains several thousand legal works, access to which is limited to members of the Bar. The other library, which was begun a few years before Union, is in Government Buildings. It contains a wide selection of books, principally of a reference character, intended primarily for the use of members of the Provincial Council and officials.

The State Library, frequently styled the Government Library, is the old "Staats Bibliotheek" of the Transvaal Republic, and fulfils very successfully the functions of a public library. It is also a depository for official publications, and contains, among its 50,000 odd books and documents, many valuable collections dealing with the history of South Africa, and particularly of the Transvaal, from the earliest times.





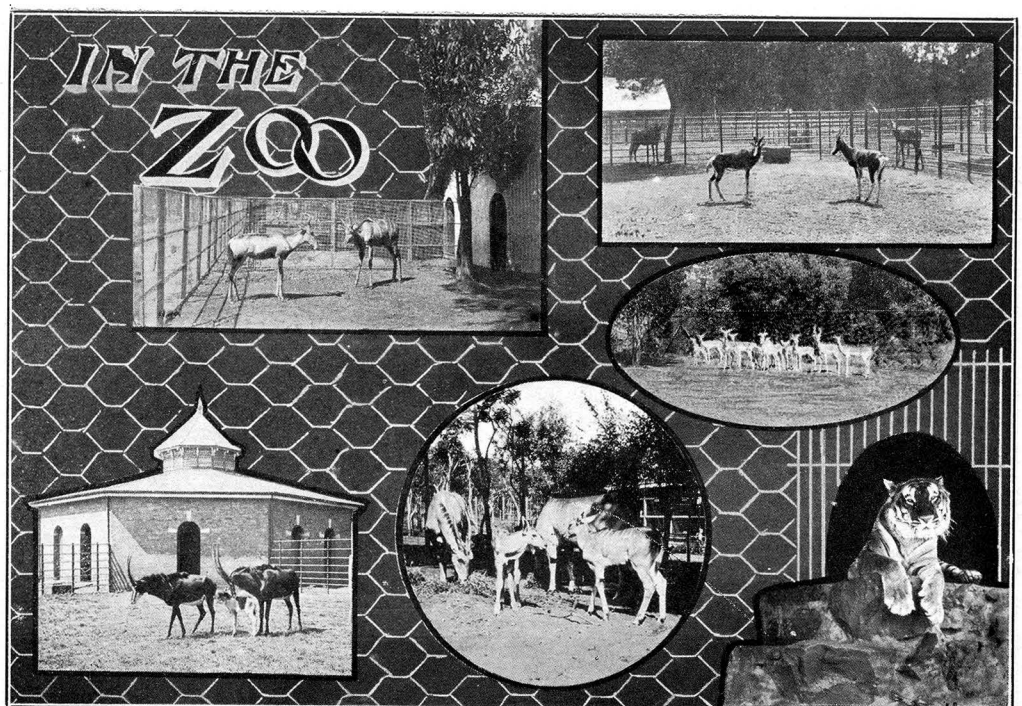
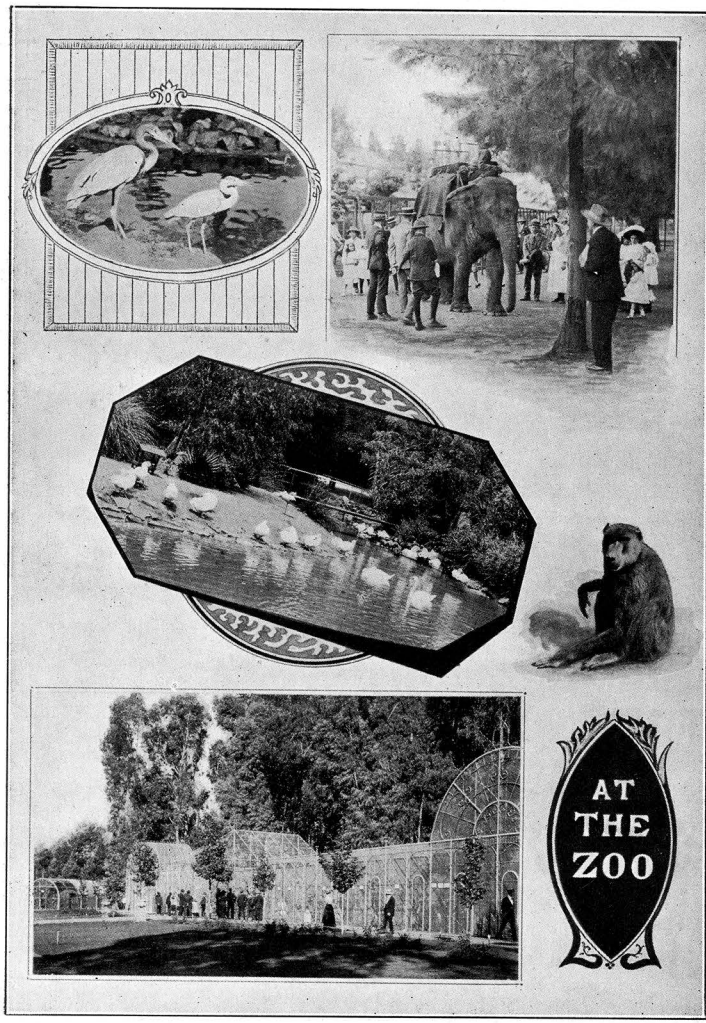


Plate XXXIV.



This library has been housed for the past nine years, after two previous changes of premises, in the Church Street buildings formerly known as the " Staats Drukkerij " of the Transvaal Republic. The occupation of these premises will, however, not continue long. The library will shortly be transferred to the more imposing and commodious building recently erected at the top of Market Street.

This library was started in 1887 and has grown from very modest beginnings into an important institution. Its constitution and regulations, as now in force, were approved and established by resolution of the Executive Council in 1893 and confirmed by the Government in 1903.

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(4) THE BACTERIOLOGICAL STATION.

A few miles outside Pretoria is situated the world-famed institution for the study of animal diseases—the Transvaal Bacteriological Station. It is a branch of the Union Agricultural Department and was erected at a cost of £60,000, which in an extensive stock-breeding country, where without adequate protections the ravages from stock diseases might entail the loss of millions, is one of the best public investments ever made.

The station is the headquarters for continuously investigating and administering measures to check stock diseases of all kinds, and under the aegis of some of the most brilliant veterinarians of the age has done remarkably good work.

(5) THE CLIMATE OF PRETORIA.

The following statistics are the averages deduced from seven years' official observations :—

Rainfall.

City : 29·51 inches per annum. Rain fell on an average of 82 days per annum.

District : 27·84 inches per annum. Rain fell on an average of 72 days per annum.

Mean Maximum Temperature.

Summer..... 81·2° F.
Winter..... 72·2° F.

Mean Minimum Temperature.

Summer..... 55·4° F.
Winter..... 41·3° F.

Sunshine (Town)—Mean.

Summer mean : 66 per cent. of possible hours of sunshine.

Winter mean : 82 per cent. of possible hours of sunshine.

Humidity—8 a.m.

Winter mean : 72 per cent. relative humidity.
Summer mean : 72 per cent. relative humidity.

Humidity—7 p.m.

Summer mean : 65 per cent. relative humidity.
Winter mean : 58 per cent. relative humidity.

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(6) EDUCATIONAL FACILITIES.

Transvaal University College.

This institution is the chief centre of higher education in the Transvaal, and is fully equipped for preparing

pupils for all university examinations above the Matriculation and up to and including the degree of Master of Arts. Although the college has not been long founded, some of its students have found their way to Oxford and the principal educational finishing centres of Europe and America.

The college buildings, surrounded by ample recreation fields, are situated near Rissik Station. They consist of two detached blocks, which, however, are only a portion of a larger design to be completed when the growth of the institution warrants. The front block is Byzantine in style—two stories in height, and contains classrooms, biological and geological laboratories, lecture rooms, library, a large lecture hall, professors' rooms, and offices. The back block is a single-story building, and is occupied by the departments of chemistry and physics; it contains also two lecture rooms.

The institution is an autonomous body with an independent council and constitution. For a full degree course the fee is £16 per annum, payable half-yearly in advance, and for separate subjects it is £4. 4s. per annum.

The staff consists of professors in Latin, Greek, English, philosophy, economics, history, Dutch, mathematics, physics, and chemistry, and a competent body of lecturers in other subjects.

Fuller particulars may be obtained from the Secretary to the Council, Mr. D. G. Hafner.

Boys' High School.

There are two institutions in Pretoria which make provision for secondary education—the High School for Boys and the High School for Girls.

General.

The High School for Boys is situated on the side of the kopje to the south-west of the town, in rural, healthful surroundings. The main building of the school consists of two floors: on the ground floor there is a large assembly hall with a gallery, and round it are grouped classrooms, laboratories, a gymnasium, and excellent lavatory accommodation. On the first floor are more classrooms, the school library, the headmaster's study, and a masters' common room. Everything that experience could suggest has been provided to make the school as convenient in plan and as fully equipped for educational purposes as possible. There are two detached wings to the building used as boarding-houses. They are well designed and furnished, and capable of accommodating eighty boarders.

The governing body of the school consists of eight elected and four nominated members.

The course of instruction is planned to prepare the pupils for the Cape University Matriculation Examination. The school fees range from £3 to £4 per term.

The boarding fees are £12. 10s. per term. Bursaries are offered by the Transvaal Education Department.

The playing fields are extensive and athletics and games are well organized. A railway station is within a few minutes' walk of the school and a tram terminus within easy access.

About 250 pupils attend regularly.

The headmaster is Mr. W. H. Hofmeyr, M.A. (Cambridge).

High School for Girls.

The High School for Girls is situated on a large plot of ground bounded by Visagie and Skinner Streets, but

the intention is to erect new buildings outside the town near the University College. The new boarding-house has already been commenced.

The present school building consists of two stories, and contains airy and well-lighted classrooms, rooms for music, drawing, science, and a gymnasium.

Connected with this school there is a preparatory school for boys and girls under ten years of age. The average enrolment of the two establishments is 320, including between 60 and 70 boarders.

Great attention is paid in the school to physical training in a way to help and not hinder the mental training of the pupils. The curriculum is the same as that of the High School for Boys and bursaries are offered annually.

The fees for the day school vary from £1. 10s. in the lower to £3 in the upper school per term. Music, singing, painting, and dancing are extras, but in no case do the fees in any of these subjects exceed £3 per term.

The headmistress is Miss E. Aitken, an M.A. of Dublin University and a graduate in honours of Cambridge.

Pretoria Normal College.

The Normal College proper consists of a fine modern range of buildings, which provide teaching accommodation for all students and residential accommodation for women in two hostels. The buildings are well designed, fully equipped, and attractively situated in extensive grounds in Rissik Street, Sunnyside. Close by boarding accommodation for male students is provided in the residence occupied by Sir Arthur Lawley

when he was Lieutenant-Governor of the Transvaal, but additional quarters are to be erected to meet the increased number of applications for accommodation.

The large number of Government primary schools in Pretoria is a great advantage to the Normal College, as the students are enabled to obtain a very varied range of knowledge and experience in practical teaching, while within easy range of the town there are schools the conditions of which approach very closely to those of the farm school.

Recreations and sports of all kinds are well organized.

From time to time courses of instruction are given at the college during the winter school vacation for teachers who are already in the service of the Transvaal Education Department.

The principal of the college is Mr. E. Garnett, from whom fuller particulars may be obtained.

Pretoria Trades School and Polytechnic.

This school provides technical education in trades; connected with it is a polytechnic in which a more advanced curriculum is given. The school has a governing body of its own, but is under the supervision of an officer of the Education Department.

Wagon-building, carpentry, plumbing, electrical engineering, farriery, etc., are taught in well-equipped workshops, and there are continuation classes in the evenings. Classes are also held for literary and commercial subjects, and lectures are given on the theoretical side of technology.

Attached to the school is a Polytechnic Club, which serves to bring the students together for outdoor as well as indoor recreation. The curriculum aims at

providing preparation for the examinations of the City and Guilds of London Institute, the Sanitary Institute, and the Johannesburg School of Mines and Technology.

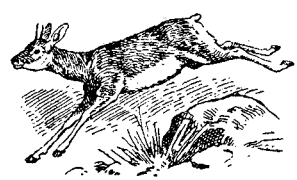
The principal is Mr. Sidney Wood, B.Sc. (1st Class Honours), London, M.E., C.E., from whom all particulars may be obtained.

Pretoria Manual Training Centre.

The Pretoria Manual Training Centre is on the grounds of the Gymnasium School, Proes Street. It is a centre for woodwork instruction and is attended by all boys from Standards IV in the schools in the immediate vicinity.

The object of the instruction is not the training of future tradesmen, as in the case of the Trades School, but simply to give a manual dexterity which will be useful in any walk of life the pupil may afterwards follow. A manual training centre has also been established at the Boys' High School.

The principal in manual training in the Pretoria (town) area is Mr. Daniel Linekar.



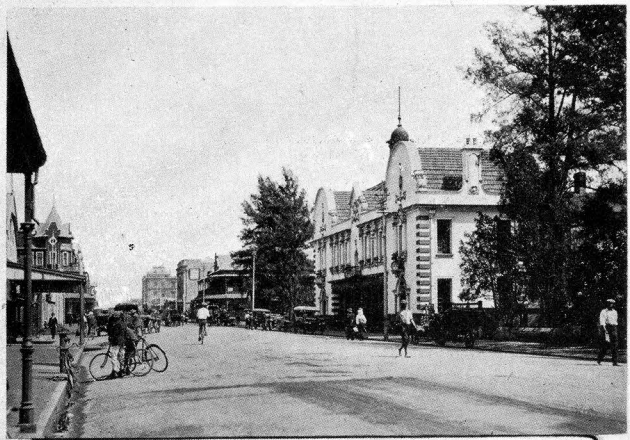
Pretoria Municipally.

CHAPTER VII.

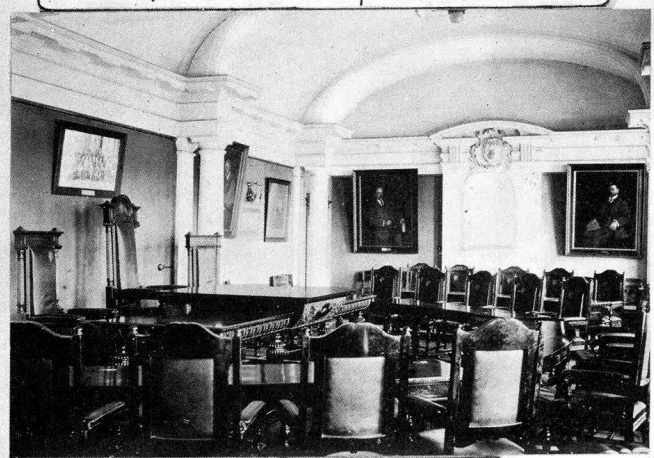
ITS HISTORY FROM 1880.

MUNICIPALLY Pretoria already compares favourably with many of the older towns of South Africa, in spite of the fact that its municipal vicissitudes have been as numerous and varied as those of the voortrekkers themselves. It owns its various public services, such as water supply, electric supply, and tramways, and will soon have its public abattoirs, swimming baths, and cattle markets which at the time of writing are under construction, together with such public works as sewerage, storm-water drains, kerbing and guttering, road-making, All this has been accomplished in little more than a decade, as the Municipal Charter of the City only dates from 1903.

It was in 1880, or thirty-three years ago, that responsible municipal government was first meditated in Pretoria. A proclamation by Sir Owen Lanyon gave a charter to the town and a municipal election was held. A Dorps Raad was formed and the late Mr. J. C. Preller was elected first Mayor of Pretoria, but he never took his seat as such, the first Transvaal war breaking out shortly afterwards.

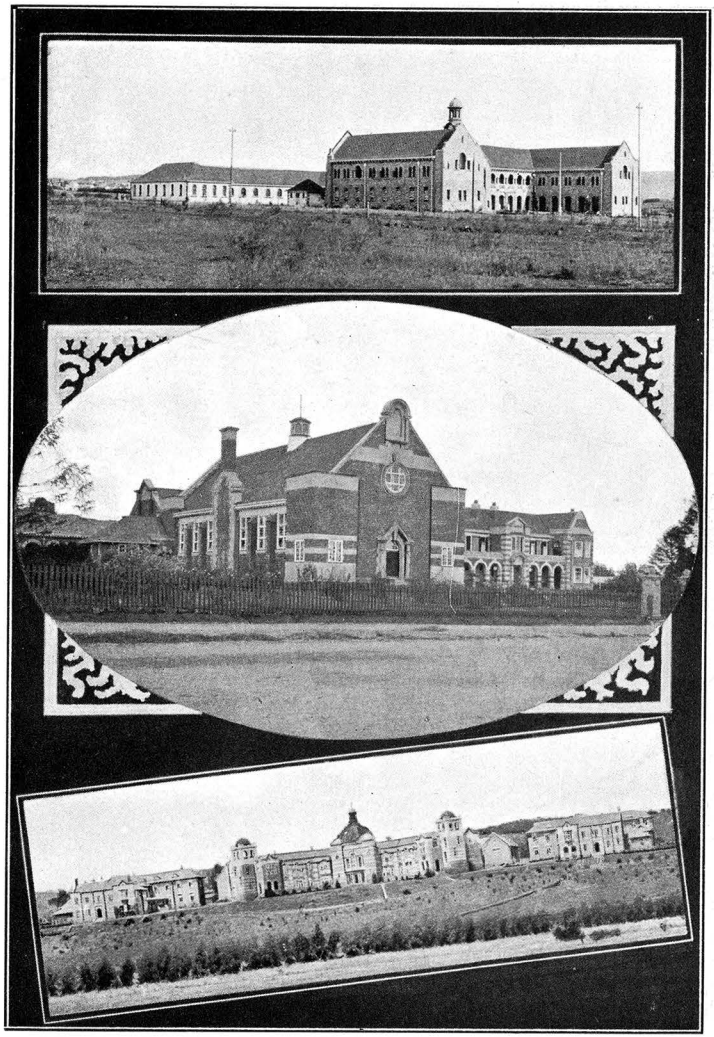


PRETORIUS ST & TOWN HALL.



TOWN HALL COUNCIL CHAMBER

Fire Brigade Station.



EDUCATIONAL INSTITUTIONS

Thereafter, until 1897, the municipal affairs of the town were controlled chiefly by the Landdrost, or Magistrate, assisted by Commissioners, but in December, 1897, a Temporary Town Council (Tijdelik Stadsbestuur) was appointed by proclamation of the late President Kruger, dated 20th December, 1897, and published in the *Staatscourant* of 29th December, 1897. The Council consisted of the following gentlemen, who were nominated by the Government :—Messrs. E. P. A. Meintjes, T. N. de Villiers, P. G. van der Byl, P. Botha, R. K. Loveday, E. F. Bourke, P. Beyers, P. Kruger, P. Mare, Advocate F. W. Reitz, and Dr. G. W. S. Lingbeek. The foregoing eleven gentlemen represented the town, and were assisted by the following four gentlemen representing the Government :—Mr. C. E. Schutte, Captain A. Schiel, Dr. Messum, and Mr. E. Lutz (Town Engineer).

Mr. T. N. de Villiers was appointed Chairman, Advocate F. W. Reitz, Vice-Chairman, and Mr. J. Bosch was appointed the first Town Clerk.

A grant of £1000 was made by Government in December, 1897, to defray necessary expenses, and thereafter two grants of £5000 were made on 22nd February, 1898, and 17th May, 1898, whilst £22,468 was paid by Government to the Landdrost during 1898 for repairs to streets, sanitation, salaries, wages, feeding of mules, etc. Altogether there was provided for Pretoria in the 1898 Estimates the sum of £60,300. In 1899 the Estimates for Pretoria for repairs and maintenance of streets amounted to £40,000.

The only municipal revenue at this time appeared to be the erf tax, which was an annual tax of 10s. on a vacant erf and one of 30s. on an erf which was built upon.

The various services of the town, water supply, electric supply, tramways, markets, and even the sanitary service, had been granted to various persons as concessions, and the town, municipally, was in this position when the second Transvaal war broke out.

In February, 1902, a Proclamation by the Military Governor created a Nominated Town Council and conferred upon them various powers, including that of rating. In 1903 a Municipal Elections Ordinance conferred responsible municipal government upon the city, and a Municipal Rating Ordinance superseded the rating powers of the 1902 Proclamation. A comprehensive Municipal Corporations Ordinance was passed later in 1903, which would have given the newly elected Council greatly enhanced powers had they chosen to come under the operation thereof and abandon the 1902 Proclamation, as they were invited to do. But the adoption of the new Ordinance automatically repealed the old Stads Regulaties (Town Regulations) of 1899, which still remained on the Statute Book. To these regulations, which prohibit the use of the footpaths by natives and coloured persons among other things, the then Town Council attached so much importance (and the ratepayers were with them in the matter) that they steadfastly refused to be brought under the Ordinance, thereby sacrificing a revenue of some £3000 per annum from erf tax, which was exacted by Government, but which under the Ordinance was created municipal revenue. The Council's application to be brought under the Ordinance, minus the section objected to, was refused, and the Council of Pretoria, until November, 1912, remained without powers possessed by every other municipality in the Transvaal.

In spite of this disability, and with the aid of the limited powers conferred by the 1902 Proclamation, plus other powers acquired by private legislation, and the application of portions of the various Municipal Ordinances promulgated by the Government from time to time, the City progressed rapidly. All the services of a municipal nature concessioned away (with the exception of the Market Concession) were acquired by the Council before the end of 1904, and an era of real municipal activity and progress was entered upon, which is continuing at the present day.

Population.

The population of greater Pretoria, including suburbs at present outside the municipal area, Military Cantonments, and other large Government institutions, as estimated in December, 1912, is as follows :—

European.....	38,850
Coloured.....	22,550
TOTAL.....	61,400

The civil population within the municipality, as estimated in December, 1912, is 43,400, made up as follows :—

European.....	26,000
Coloured.....	17,400
TOTAL.....	43,400

Valuation and Rates.

The total valuation of the town, including non-rateable and Government property, with the exception of the Union Buildings, which are not yet valued, is

£10,485,213. Of this amount £7,760,958 is rateable. Rates are levied on the full value of land and buildings, and the rates for the years 1911, 1912, and 1913 were 2d., 2¼d., and 2½d. in the £1 respectively. These rates cover all general municipal services, such as street and road making, street watering and cleansing, health and fire protection, parks and pleasure grounds, etc., but do not cover the personal services of water supply, household refuse removal, and sewerage or sanitary services, for which separate charges are made.

Water Supply.

The water supply of Pretoria is derived from a series of dolomite springs, having their outlet on the portion of the farm Groenkloof, locally known as the "Fountains Valley," at an altitude some 150 feet above Church Square, and in distance three miles from Church Square. At present the approximate discharge of the combined fountains is 6,000,000 gallons per diem. About five years ago the combined discharge of the springs fell to 5,000,000 gallons; an increase, however, took place after the great flood of 1909. During the period covered from August to December the consumption of the community is roughly 4,000,000 to 5,000,000 gallons per diem. There is practically no restriction placed upon the domestic consumption of water by the inhabitants of Pretoria. Domestic consumption has come to be recognized as including the watering of gardens, and in this direction water is used lavishly, the consumption during the summer being practically 100 gallons per head per diem, and for this consumption the following charges are made:—

10s. per quarter for dwellings (building value only) valued at £250 to £3 per quarter for dwellings

valued at £6000 and over. For gardens the charge is £1 per annum for each 7000 square feet of garden on which water is used.

Meters are only used on Government institutions, hotels, and large business premises. Before any meter charge is made against the Government they are entitled to 100,000 gallons of water per diem free of charge. The South African Railways are entitled to 600,000 gallons of water per diem free of charge, but their consumption at the present is far below this figure. The charge to the Government over and above the 100,000 gallons is 1s. per 1000 gallons. Business premises are charged at the rate of 2s. per 1000 gallons up to a certain quantity, and thereafter 1s. 3d. per 1000 gallons. The Kent and Tyler meters, British Positive, are used locally. Water is at present delivered by means of three mains, varying in diameter from 18 inches to 10 inches, but this older scheme is being rapidly abolished. The total flow of the springs will at an early date be delivered to a reservoir by means of a 3-foot diameter reinforced concrete aqueduct, and the water will be stored in a service reservoir, which will have a capacity of 6,000,000 gallons. From this point water will be distributed throughout the whole municipal estate by means of steel and cast-iron pipes to reservoirs in Arcadia, Sunnyside, and the western town lands. Pumping is necessary to the higher areas of Arcadia and Sunnyside, particularly that area occupied by the Union Government Buildings. The water is about 7° hardness and is perfectly clear and absolutely pure. No filtering has at any time been found necessary. An analysis of the water is made weekly.

Electric Supply.

The electric supply of Pretoria is D.C. at 250 or 500 volts, over a radius of about two and a half miles. The charges per unit are as follows :—

Lighting, 6d. per unit.

To bona fide private dwelling-houses, 6d. per unit for such number of units in one month as is represented by 1 unit for each £100 valuation of buildings plus 12 units, and for all in excess of this, 2d. per unit.

Power rate.—First 500 units a month, 3d. per unit.
Next 500 ,, ,, 2d. ,,
,, 1000 ,, ,, 1d. ,,
All over 2000 units a month, ¾d. ,,

Two rate meters are installed for any consumer at a charge of 2s. 6d. per month, when all day consumption is charged at power rates.

Tramways.

The electric tramways cover about 11¼ miles of route, and radiate from Church Square to Railway Station, West End, Hospital, Zoo, Sunnyside, Arcadia, and Union Buildings. The fares are 3d. cash or 2d. by coupon per stage. All routes from Church Square are one stage, with the exception of Sunnyside, Arcadia, and Union Buildings routes, which are divided into two stages.

The cars leave the Railway Station for Church Square and other routes at least every seven and a half minutes, and extra cars meet all important passenger trains.

Special cars can always be provided to meet large parties arriving by train, on notice being given in advance to the Municipal Tramways Department.

Sewerage System and Sanitation.

The sewerage system of Pretoria is that known as the "Water-borne System," and has cost approximately a quarter of a million sterling. The whole town is saturated with sub-soil water, and this has necessitated sub-soil drains being laid under all reticulation and other sewers. About forty miles of reticulation sewers have been laid, which constitutes practically the whole of the reticulation system of Pretoria proper, the only portion of the municipality as yet which has been sewered. Stoneware pipes, having the Stanford bitumen joint, are universally used. The intercepting trap on the street boundary is not provided. The recommendation of the Departmental Committee, appointed by the President of the Local Government Board, has been adopted. No special arrangement has been made with regard to ventilating the street sewers, and no nuisance has so far arisen, and each nuisance as it arises will be dealt with on its merits. The stoneware pipes used are of Transvaal manufacture, and are vitrified and glazed by the usual methods. The reticulation system connects at various points with 3-foot diameter reinforced concrete outfall sewer, which discharges its contents at the sewage outfall works situated at the lowest portion of Pretoria proper, and at the extreme edge of the northern boundary of the municipality. The outfall works consist of Watson detritus cone-shaped tanks, with automatic supply tanks feeding continuous aerating filters. The medium of aerating filters is composed of granite, graded from $\frac{3}{4}$ inch to 3 inches, resting on a false floor of aerating tiles. The effluent from the filters passes direct into the Aapies River. The sludging of the detritus tank takes place daily and is discharged into septic tanks,

which have no contact whatever with the aerating filters. The septic effluent passes thence on to suitable loamy soil, which is cultivated with lucerne. No part of the septic effluent finds its way into the river.

The scheme as a whole is still in progress. The effluent so far from the works has been entirely satisfactory from every point of view. The manager in charge of the outfall works acts jointly under the control of the Town Engineer and the Medical Officer of Health, and this officer has a knowledge of chemistry and agriculture and is possessed of general business aptitude. The daily chemical analyses are made by the manager at the laboratory at the works. Samples of sewage are analysed and a complete record kept of the behaviour of the effluent. The works are capable of dealing with 3,000,000 gallons per diem, which is based on 30 gallons per head per diem on a population of 100,000, so provision has been made for nearly two and a half times the whole population of the municipality.

The charges for connections to the municipal sewers are £1. 10s. per annum for each w.c. for Europeans and each urinal space of 27 inches in width, and 10s. per annum for each w.c. for the use of natives. In addition to this, a rate of ½d. in the £1 is levied on the valuation of all property in the sewered area, whether built upon or not.

Prior to the introduction of the sewerage system, the Council were carrying out 8588 pail services, of which 1500 were daily and 7088 tri-weekly. The removals are performed between 11 p.m. and 4 a.m., and the service has been described as the cleanest and most efficient in the whole of South Africa. The

charges are—for daily services, £7. 10s. per annum; tri-weekly services, £3 per annum. About 4000 of these services are ceasing as properties in the sewered area are connected to the sewers.

The household rubbish removal service is carried out daily or bi-weekly at the wish of the householder; the charges being—for a daily service, £5 per annum; bi-weekly service, £1. 10s. per annum.

Fire Department.

The Fire Department is housed in a magnificent building at the corner of Koch and Minaar Streets.

The premises were specially designed for the purpose and give accommodation for—

Officers,
15 married firemen,
and a number of single men.

The building comprises—

Watchroom,
Engine-room,
Offices,
Gymnasium,
Billiard-room,
Reading-room,
Messroom,
Workshop, etc.,

and was erected during 1912 at a cost of £30,000.

The equipment consists of—

53 Gamewell street fire-alarm boxes,
8 Circuit station instruments and recording set.
17 Private fire alarms.
17 Private telephones.

1 Motor chemical engine.
2 Motor turbine pumps.
1 Motor turntable fire escape.
1 Motor ambulance.
1 Motor car for chief officer.

The whole of the fire hydrants throughout the municipal area are of the pillar pattern.

The Ambulance Department is under the control of the brigade, and about 400 cases are attended to annually.

The cost of upkeep of the department is approximately £8000 per annum.

The brigade was established in 1902 and the fire losses in that year amounted to £30,843. They have steadily decreased year by year, and for the present municipal year the fire losses amounted to £2000.

Great attention is accorded to the question of fire prevention by the brigade, and separate inspections are made. These inspections cover—

Theatres,
Public buildings,
Petrol and oil stores, and
Commercial buildings generally,

and the effect of these inspections has been considerable in reducing causes of fire, while the general influence of the Fire Department's prevention policy is giving fire protection that standing which it merits as a highly important economic feature in municipal and national life.

Roads, etc.

The condition of a number of the principal roads in Pretoria is excellent, but much has yet to be done in this

direction. The Council are considering the question of raising a special loan of £250,000 for this particular purpose. The following statistics show some of the permanent work accomplished since 1902 :—

Number of miles of road made since 1902—		
1st class.....	25½	miles.
2nd class.....	62½	,,
	88	miles.
Kerbing and guttering.....	25	miles.
Storm-water drains.....	35	,,
Sewers.....	25	,,
Electric tram track.....	13½	,,
Aapies River canalization....	2·9	miles, complete.
Aapies River canalization....	1·3	,, partial.
TOTAL.....	4·2	miles.

Labour.

The supply of labour in Pretoria, white and coloured, is generally sufficient for all requirements, with the exception of trained female domestics, white or coloured, for which there is always a demand.

The rates of pay of men in the municipal service may be taken as a fair criterion of wages paid in Pretoria :—

Natives, unskilled—35s. to 50s. per month, with housing and rations.

Natives (sanitary service)—£3 to £5 per month.

Mule-drivers (white)—7s. 6d. to 8s. 6d. per day.

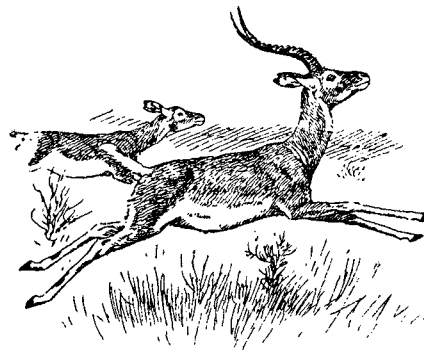
Steam-roller drivers (white)—16s. per day.

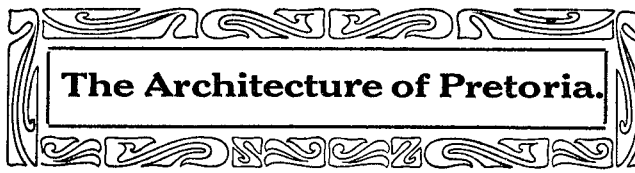
Masons, fitters, carpenters, smiths, and other artisans —2s. 6d. per hour.

Gangers (white)—7s. 6d. to 15s. per day.

Foremen and inspectors—22s. 6d. to 25s. per day.

Book-keepers, cashiers, clerks, licence officers, draughtsmen, and other officials on the permanent staff have fixed grades, and their salaries range from £120 to £500 per annum.





CHAPTER VIII.

"An honest tale speeds best, being plainly told."

(By V. S. R. P.)

PRETORIA lies more or less in a hollow, surrounded by hills, of which Meintjes Kop is the most important, and of considerable eminence, on the northern side of the town.

The climate, although warm in summer, is during the autumn and winter months as perfect as any in the country.

Nature has been generous to Pretoria in many ways, and the various opportunities afforded will it is hoped be treated to give the town an added impetus towards that future for which nature, its position, and the course of politics and industrial development have combined to single it out. Lake and lay-out schemes are under careful consideration, together with industrial and other big propositions backed up by fine efforts in design and architecture.

In setting out on this great enterprise, a start has been made from a definite standpoint, directing efforts to a single end, and labouring under no illusion as to its aims and objects.

Despots in ancient times made it one of their objects to build on a big scale, partly to display their own magnificence and power, yet recognizing the fact that the beautification of their cities was the best method of appealing to the people and attracting visitors, at the same time giving the idea of civic and national dignity and advancement.

Confronting us in every direction, we are made aware of a modern daybreak in architecture, and the great work of architectural education is being promoted.

It is therefore the duty of each one to strive that this heritage may pass on to our successors greatly magnified and improved in beauty, and of no less instruction to them than it has been to us, fighting earnestly against the modern vanity which would obliterate all traces of bygone days, when art was living, with the dull imported present-day stamp of feeble copyism or wilful falsification.

It is hoped that this modern garden city which has had an auspicious start will have power to show capacity to reject the bad and accept the good of older civilization; to build and lay out permanent and beautiful records of faith in itself and for the ultimate advancement of the nation.

As has been frequently said, true art is of national growth, and the outcome and corollary of national life, not only the concern of a special class or profession; we are on the eve of developments which, wisely directed, will make our architecture a national art.

Those who are capable of looking boldly towards the future will not be disposed to deny the fame the Capital deserves and the redeeming influence already produced by good work on the art and architecture of the country.

It may not be inopportune to take a general survey of some of the most important architectural works in Pretoria, which, when seen, will speak for themselves.

Upon entering the City through the Fountains Valley, a picturesque panoramic view is obtained of the surrounding hills and general outlay, stretching towards the eastern suburbs and away beyond for miles.

Right across upon the opposite range of hills facing the entrance to Pretoria rear the sister towers of the Union Buildings, with bold unbroken skyline, in which the opportunity to display genius for design has been fully grasped. A most striking effect of this noble building is obtained just before sunset, when it stands up bathed in roseate glow, while all the surroundings remain in deep shadow.

Railway Station.

Situated at the highest part of the town on the south side is the newly completed Railway Station, facing down Market Street. Of noble dimensions and built in stone, this building certainly displays character in the simple architectural treatment adapted for a sunny climate. The roof has wide overhanging eaves laid with red, local-made, pan-shaped tiles, and in the centre rises a stone clock turret or flèche.

The various waiting and refreshment rooms have wall linings of marble, each of different colours. The furniture has all been specially designed and made of South African woods.

Leading out from the main hall, which has a domed and vaulted ceiling, supported by polished red granite columns, is placed a wide loggia stretching almost the

whole length of the main façade. A porte cocheré forms the central feature, above which forms a balcony leading from the upper arcade.

A piazza spreads out in front of the building planted with turf and ornamental evergreen trees, through which run the trams, stopping in front of the main entrance.

Museum, Library, and Art Gallery.

After leaving the Railway Station and half-way down towards Church Square is placed the New Museum Buildings.

The main façade, which is built of stone, forms a two-story colonnade on either side of central entrance. Although the scheme is only partially complete, the side wings having yet to be added, this block is massive and dignified in appearance.

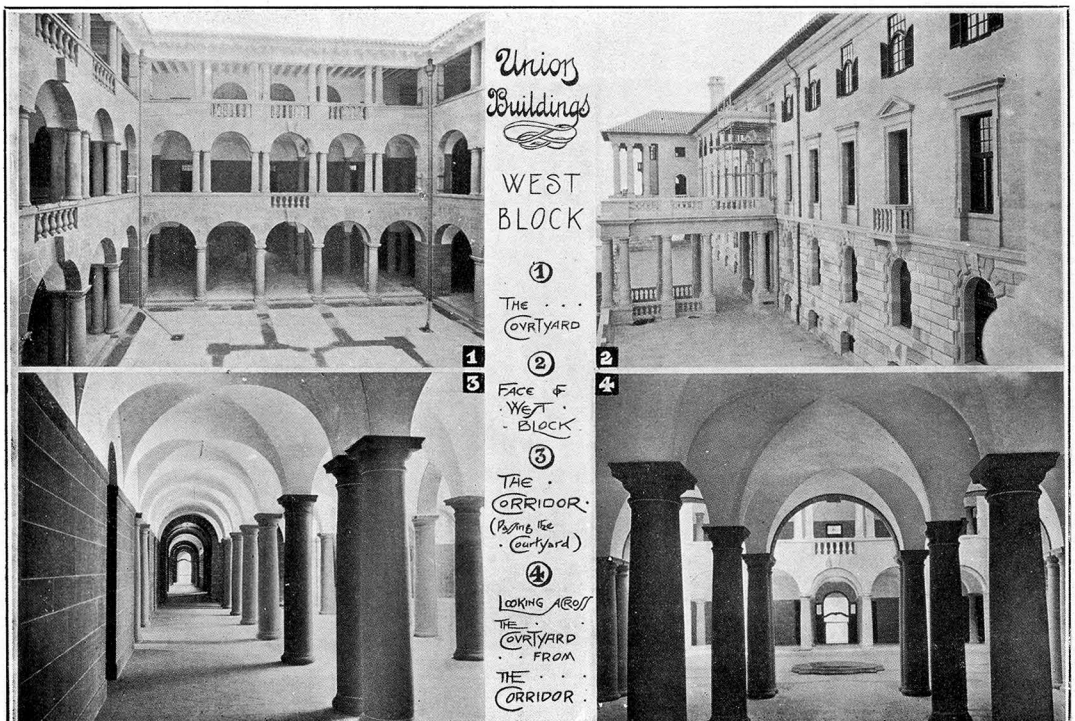
Fire Station.

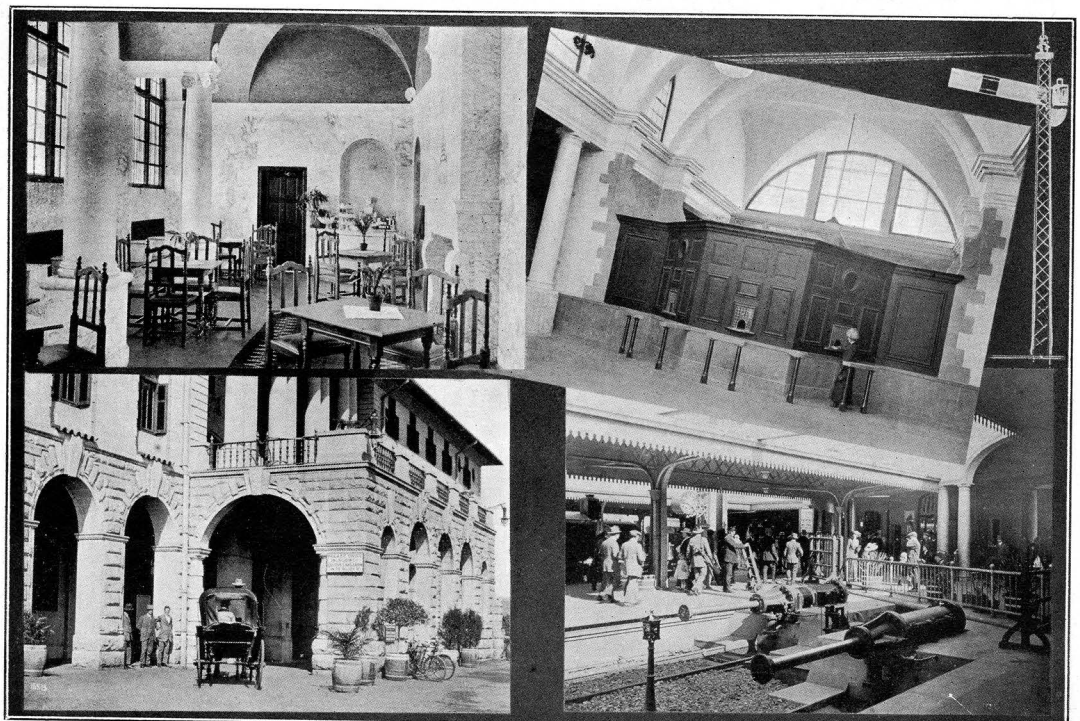
The New Fire Station, which has just been opened, is almost opposite the Museum Buildings, but in an adjoining street. This building looks well with a red-tile roof and white plastered walls, standing upon a base of rough local stone.

Church Square.

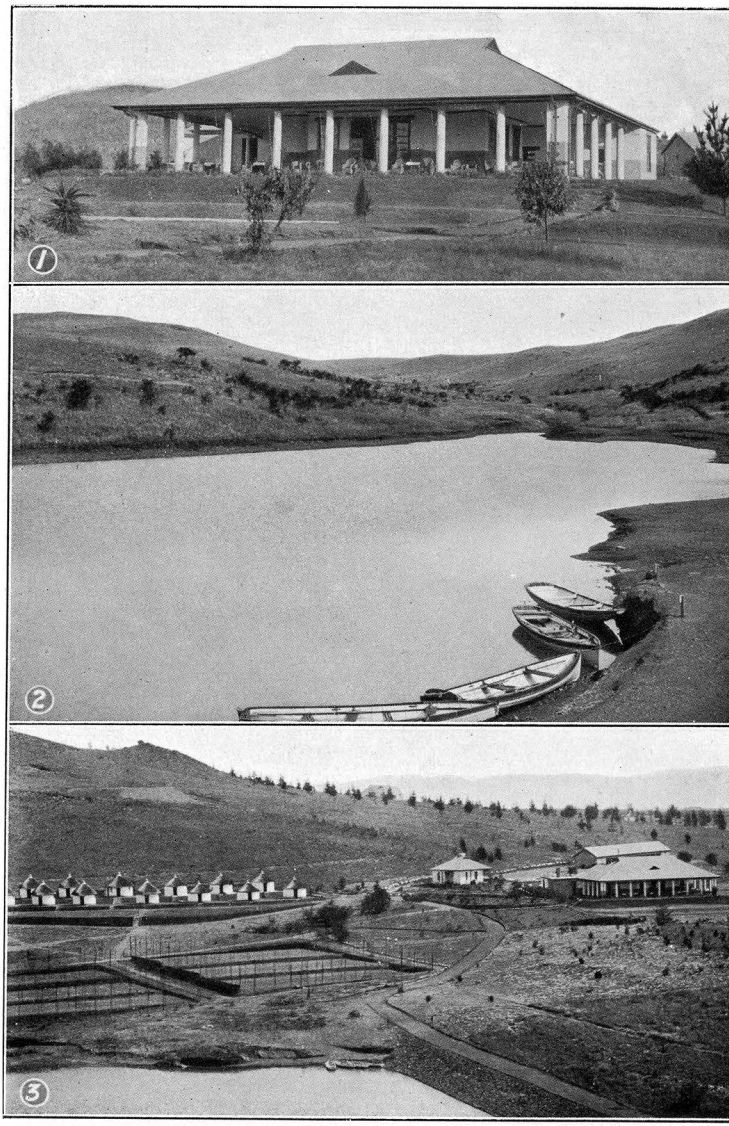
The Church Square, which at one time was a barren and uninteresting open space, now wears a vastly improved and orderly appearance.

At the entrance from Market Street, on the south side, a flight of steps, extending the width of the street, leads down into the Square proper, bounded on either side by massive carved "pylons," bearing the arms of the Union and the Municipality. At the foot of the steps are placed pedestals for lions, which will be fixed in position in the near future.





RAILWAY STATION.



COUNTRY CLUB, WATERKLOOF.

PLANT PATHOLOGIST'S LABORATORY.

From the "pylons" the retaining wall is built, forming an elipse on plan, in which recessed fountains are placed.

A classic balustrade surrounds top of wall at the pavement level. Pedestals occupy positions at each entrance, upon which will be placed bronze statues of eminent South Africans.

Upon the lower or northern side of the Square, pillars are placed to receive bronze chains, and along the pavements an avenue of trees (*Lagustnen japonica*, are planted, affording a shady and majestic walk) at the same time giving a balance to the whole scheme.

The centre of the Square is occupied by a large circular flat spray fountain, with massive granite urns at the angles, in which palms are planted. Opposite these urns bronze lamp standards will be fixed for illuminating purposes. A bronze figure will occupy and form the central feature, with decorative bronze reliefs in each panel. The footways across the Square will be paved with granite, laid in patterns, and divided by terra-cotta urns containing ornamental trees. The remaining spaces within the Square have been planted with lawns.

The two angles on north side above wall are occupied by tramway pavilions, with offices in the basement.

The whole scheme has been carried out in local granite, and a fine architectural effect has been obtained.

Post Office.

The New Post Office is of stone, built upon a granite base, three stories in height, and occupies a corner site upon the west side of Church Square. The "style"

is bold and dignified in treatment, with a central colonnade over an arched loggia on the Square façade.

From this arcade entrance doorways lead into the stair hall and Post Office business hall.

These halls are lined with red Warmbaths stone, and have pavings of black and white marble, laid in patterns.

The building is splendidly equipped and finished, and all the fittings to main counters are of bronze.

It is a great pity that all the buildings surrounding the Square are not more uniform and symmetrical in appearance.

It is hoped that buildings of a more monumental character will be erected to replace the chaos of different treatments existing to-day.

The Union Buildings.

The Union Buildings, which are situated within a mile distance of Church Square, and about half-way out towards the principal suburbs, occupy a grand and commanding position upon the plateau below Meintjes Kop.

On this range of hills, which form the Acropolis of Pretoria, where the atmosphere is bracing and invigorating, the Government have erected a magnificent pile of public buildings.

The building is approached by a tramway and carriage drive, winding round and passing in front of the main terrace.

A series of steps and terraces are necessitated, which rise immediately in front of the central or amphitheatre block.

The rising tiers of the auditorium have been cut out of the face of the hill, and this amphitheatre, which was primarily designed to serve purely utilitarian purposes, is certainly one of the finest possible compositions.

The buildings are grouped in three main blocks, formed by the eastern and western wings and connected by the great semicircular and amphitheatre block. This central block is bounded on each side by sister towers, crowned by figures of "Atlas" in bronze.

The space enclosed by the semicircular treatment is terraced and formed with stone, at the bottom of which is placed a rostrum with ornamental ponds, stretching the whole length of amphitheatre and crossed by bridges.

This magnificent pile has been designed to suit the conditions of a southern climate, where large open courts with fountains and loggias are necessary to ventilate and cool the building.

The dominant feature characteristic of this style is the long unbroken tile-covered roof, with heavy projecting eaves running the entire length of the building. The great columnar pavilions, which project at the ends of the blocks, give the necessary relief, together with colonnaded porticos leading directly into the atriums or open courts.

The archives department extends under the greater portion of the buildings, wherein 43,000 superficial feet of space is provided to store records.

In the sub-basements stationery stores, bookbinding departments, heating chambers, and storerooms for caretakers are arranged.

Access is obtained from the main road by a subway under the end pavilions.

Each of the blocks has three floors of offices, providing in all accommodation for about 1500 officials, including offices for Ministers and the Governor-General.

The Ministers' rooms and Executive Council chambers are placed in the projecting corner pavilions, and the general offices in these blocks are grouped round the internal courts or atriums.

The central block, which connects the eastern and western blocks, contains the necessary common rooms, which lead into an open stone colonnade overlooking the amphitheatre.

On each side is provided conference rooms, library, reading-rooms, and a tearoom.

The whole building is erected in freestone, resting on a base of local granite. The approaches to the "Capitol" have been carefully considered, and are made as easy in gradient as possible. The 80-foot-wide roadway, which is 12 feet below main terrace, will be planted with a double row of trees. Twenty feet below the public roadway lies the tramway track, and placed in the wall at convenient spots are recessed grottos or waiting shelters for tram passengers.

From this level two subways lead to staircases in each block.

The building will be approached from the railway, the City, and the eastern suburbs by an easy winding road, specially contrived to give facility of access, and from the last by a high level road from Bryntirion and Government House on the east side.

The precincts are to be laid out on the principle of the great Italian and French models in broad lines and vistas.

The whole is a noble piece of architecture, which has been wrought in the field of art through hard and unceasing work, combined with genius, has brought its designer fame and placed the Capital of South Africa far up in the field of architecture.

The high standard which obtains in much contemporary work is due to the influence and fundamental principles which govern house planning in a sunny climate and the beauty of its accessories, where beauty does not depend on extravagant detail, but on its subordination to simplicity of treatment and unity of idea. This influence over the younger generation is perhaps the greatest hope for our architecture in the future.

Government House.

The Government House, which is situated on the same range of hills as the Union Buildings, lies further east, and about two and a half miles out of the town.

The position it occupies is on the top of a stony kopje and on the very edge of the ridge, and was specially selected so as to overlook the valley on the north and that of the south, in which the Capital is built.

The sloping sides of the hills are covered with native bush, and a very extensive view is obtained of the surrounding country.

The building has been treated in the Cape Colonial style, with whitewashed walls and curved gables.

The roof is covered with red tiles, and the exterior woodwork painted green, to suit the atmosphere and landscape of the Transvaal.

The position on the edge of the kopje, allowing only a small semicircular terrace on the northern garden front of the house, rendered it necessary to have the entrance hall, the vestibule, and the porte cocheré at a lower level than the ground floor. This treatment gave opportunity for the extensive cloakrooms which are required.

The chief feature in the plan is the large hall for receptions, which has been made an integral part of the house, instead of being, as in most of the large Colonial Government Houses, a separate suite of entertaining rooms detached from the living portions of the house.

Leading from the hall is a large vaulted peristyle, open in the centre to give light and brightness to the bay window of the hall, from the shady recesses in which palms are placed a magnificent view is obtained of the gardens and the distant hills.

Above the peristyle and loggias runs an open balcony, which is much occupied of an evening during the summer.

Although the hill site renders the building cool, it is yet necessary that all the windows should be protected by shutters from the direct rays of the sun, at the same time giving a fine architectural effect of the green woodwork against the white walls.

The gardens are beautifully laid out, and treated in the Italian manner with pergolas and broad vistas.

Transvaal University.

Pretoria is rich in institutions which go to the making of an important centre. Its educational facilities are as varied as they are complete. The Transvaal University for higher education has been placed on the eastern side of the town, between the town and the suburbs. The site is an open and healthy one, upon rising ground, facing the new sports grounds. The building is of stone, with a tiled roof, and is U-shaped on plan with cloisters on the three inner sides.

A palm avenue is to be planted leading up to the main entrance on similar lines to the famous Californian examples.

Boys' High School and Boarding-houses.

These buildings have been erected upon the slopes of a hill on the opposite side of the valley to the Union Buildings. It is an imposing block of buildings, erected in faced brick and stone, with a tiled dome rising from the centre of the blocks, overlooking the new public sports ground which lies in the valley below.

Normal College.

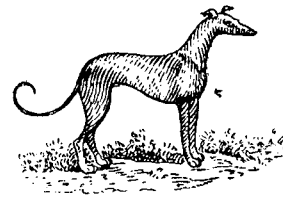
The Normal College, which is erected in the southern suburb called "Sunnyside," is erected in faced brick and stone, bounded on either side by residences, both for men and women. This institution is intended for the training of teachers.

The Site of a National College of Agriculture.

This magnificent property lies one and a half miles from the centre of the town, and comprises acres of valley, veld, forest, and hills. It is the most beautiful and picturesque spot around Pretoria, and will form one of the largest agricultural college grounds in the world.

It is intended to spend £100,000 upon the first portion of the buildings, which will give a fine opportunity for a bold and suitable design, erected to suit and harmonize with its vast and rugged surroundings.

There is much to be done, and as the pages are slowly turned over it is hoped that architectural tradition will be worthily maintained by the rising generation; at the same time look back with vivid pleasure to those wrestlings which have taken place in the years gone by to give Pretoria the position it holds to-day. These privileges must be maintained, and to those who have enthusiasm and interest this labour will be a perennial delight to hand on the torch of architecture, as in the old Greek game of lampadephoria, where runners took torches, lit at the altar of Prometheus, Athene, and Hephaistos, and passed them from hand to hand till they reached the winning post.



Flora.

CHAPTER IX.

BOTANICALLY Pretoria and district form one of the most interesting centres in the Transvaal. On one side is the typical high veld flora, and southwards the bushveld flora extends above its normal altitude to the limits of the Magaliesberg. The district is therefore peculiarly rich in types of what are really two distinct kinds of flora—that of the Limpopo Basin region and that of the central plateau region of the Transvaal and Orange Free State.

The diversity of the geological formation also tends to increase the variety in the local flora; and as Pretoria is an important railway centre, excursions can easily and quickly be made to points of widely differing botanical interest, so that the botanist who is visiting South Africa for the first time would be well advised to make Pretoria his centre of operations for an extensive portion of his stay in the country.

NOTES ON THE FLORA OF PRETORIA.

On the kopjes round Pretoria there are, in the first place, the grasses of which the following genera and species are predominant :—

Family Gramineae.

Agrostis lachnantha, Nees.

Flora.

Andropogon appendiculatus, Nees.
,, cerisiaeformis, Nees.
,, amplectens, Nees.
,, hirtiflorus, Kunth.
,, intermedius, R. Br., var. punctatus, Hack.
,, encomis, Nees.
Aristida aequiglumis, Hack.
,, barbicollis, Tr. and Rupr.
Axonopus semialatus, Hook., var. ecklonii, Stapf.
Bromus unioloides, A. B. K.
Chloris virgata, Sw.
Cymbopogon excavatus (Hochst.), Stapf.
,, hirtus (L.), Stapf.
Cynodon dactylon, Pers.
Digitaria eriantha, Steud.
Elionurus argenteus, Nees.
Eleusine indica, Gaertn.
Eragrostis brizoides, Nees.
,, chloromelas, Steud.
,, gummiflua, Nees.
,, major, Host.
,, plana, Nees.
,, superba, Peyr.
Lolium temulentum, L.
Microchloa caffra, Nees.
Heteropogon contortus, R. and S.
Panicum serratum, Spr.
Pennisetum cenchroides, Rich.
Perotis latifolia, Ait.
Setaria nigrorostris, Dur. and Schinz.
,, perennis, Hack.
,, sulcata, Raddi.
,, verticillata, Beauv.

Sporobolus festivus, Hochst., var. stuppeus, Stapf.
Themeda Forskalii, Hack. var.
Trachypogon polymorphus, Hack., var. capensis.
Tragus racemosus, All.
Tricholaena rosea, Nees.
,, setifolia, Stapf.
Trichopteryx flavida, Stapf.
Tristachya biseriata, Stapf.
Urelytrum squarrosum, Hack.

In vleis and near the water—
Imperata arundinacea, Cyr.
Phragmites communis, L.
Erianthus junceus, Stapf.

Between them grow annuals, bulbous plants, succulents, low and tall shrubs, and small trees. The bigger trees are north of Pretoria at Wonderboompoort. Of these we have to mention, in the first place, the Wonderboom, Ficus cordata, Thunb., consisting of the old fig tree in the middle and younger ones around it, looking at a distance as one immense tree. The younger ones have sprung up from branches of the old tree, which are bent to the ground and have rooted there. In the second place, come all the mimosa trees, the Kaffir tree, species ef Rhus and Combretum, etc.

Family Leguminosae.

Acacia arabica, Willd.
,, caffra, Willd. (Haakjesdoorn).
,, giraffae, Burch. (Kameeldoorn).
,, hebeclada, D. C.
,, horrida, Willd. (Wacht-een-beetje, Karroothorn).
,, robusta, Burch.
Dichrostachys nutans, Benth. (Sikkelbosch).

Burkea africana, Hook. (Wilde sering).
Peltophorum africanum, Sond.
Erythrina caffra, Thunb. (Kafferboom).

Family Anacardiaceae.
Sclerocarya caffra, Sond. (Maroela).
Lannea dicolor (Sond.), Engl.
Rhus excisa, Thunb.
,, Gueinzii, Sond.
,, lancea, L.f. (Karreeboom).

Family Combretaceae.
Terminalia sericea, Sond. (Vaalbosch).
Combretum glomeruliflorum, Sond. (Vaderlands Wilge).
,, Zeyheri, Sond.

Family Sapotaceae.
Mimusops Zeyheri, Sond. (Moepel).

Family Rhamnaceae.
Zizyphus mucronata, Willd. (Blinkbaar wacht-een-beetje).
Rhamnus prinoides, L'Hérit.

Family Sterculiaceae.
Dombeya rotundifolia, Harv. (Wilde peer).

Family Sapindaceae.
Pappea capensis, E. and Z. var.

Family Ulmaceae.
Celtis rhamnifolia, Presl. (Gamdebo stinkhout).

Family Euphorbiaceae.
Croton gratissimus, Burch.

Smaller trees are: Ochna pulchra, Hook., f. (Ochnaceae); Protea abyssinica, Willd. (Proteaceae) [Zuikerbosch]; Gymnosporia buxifolia (L.), Szysy. (Celastraceae); Royena pallens, Thb., and Euclea lanceolata,

E. Mey. (Ebenaceae); Chrysophyllum magalismontanum, Sond. (Sapotaceae) [Stamvrucht]; Gardenia Rothmannia, L. f. (Rubiaceae) [Wilde katje-piering]; Combretum holosericeum, Sond. (Combretaceae); Rhus flexuosa, Diels.; Rhus Zeyheri, Sond. (Anacardiaceae); Strychnos pungens, Solered. [Klapper]; Chilianthus arboreus, A. D. C.; Nuxia pubescens, Sond. (Loganiaceae); Ximenia caffra, Sond. (Olacaceae) [the wild plum]; Pittosporum viridiflorum, Sims (Pittosporaceae); Acocanthera venenata, G. Don (Apocynaceae) [Giftboom]; Heteromorpha arborescens, Ch. and Schl. (Umbelliferae); Cussonia paniculata, E. and Z. (Araliaceae) [Kiepersol]. Most of them occur at Wonderboompoort and are spread over the kopjes round Pretoria.

Of the taller shrubs I mention: Buddleia salviaefolia, Lam. (Loganiaceae) [Wilde salie]; Mundulea suberosa, Bth. (Leguminosae); Brachylaena discolor, D. C. (Compositae); Pavetta Zeyheri, Sond., Vangueria infausta, Burch., Vangueria parvifolia, Sond., Plectronia Mundtiana (Ch. and Schl.), Pappe (fam. Rubiaceae); Maerua caffra (Burch), Pax. (fam. Capparidaceae); Xanthoxylum capense, Harv. (fam. Rutaceae) [Knopjeshout, Wild cardamon]; Gymnosporia tenuispina (Sond.), Szysy. (fam. Celastraceae); Grewia occidentalis, L. [Kruisbesje], Grewia cana, Sond. (fam. Tiliaceae); Ehretia hottentotica, Burch. (fam. Borraginaceae); Clerodendron glabrum, E. Mey. (fam. Verbenaceae); and some more.

The spring and early summer is the time for the bulbous plants. Common are:—

Family Liliaceae.

Bulbine asphodeloides, R. and S.
,, narcissifolia, Salm.-Dyck.

Anthericum Cooperi, Baker.
,, trichophlebium, Baker.
Albuca pachychlamys, Baker.
Aloe arborescens, Mill.
,, Peglerae, Schönl.
,, transvaalensis, O. Ktze.
Asparagus plumosus, Baker.
,, stipulaceus, Lam.
,, virgatus, Baker.
Bowiea volubilis, Harv.
Chlorophytum Bowkeri, Baker.
Dipcadi ciliare, Baker.
,, viride, Moench.
Drimia media, Jacq.
Encomis regia, Ait.
Kniphofia natalensis, Baker.
Ornithogalum Eckloni, Schlecht.
Scilla lanceaefolia, Baker.
,, rigidifolia, Kunth.
Tulbaghia alliacea, L.
Urginea multisetosa, Baker.

Family Amaryllidaceae.

Buphane toxicaria, Thunb.
Crinum longifolium, Thunb.
Haemanthus magnificus, Herb.
Hypoxis argentea, Harv.
,, rigidula, Baker.
,, ,, ,, var. pilosissima.
,, Rooperi, Baker.

Family Iridaceae.

Gladiolus crassifolius, Baker.
,, permiabilis, Delar.
Homeria pallida, Baker.

Lapeyrousia grandiflora, Baker.

Moraea edulis, Ker.

Climbing and straggling plants are :—

Clematis brachiata, Thunb. (fam. Ranunculaceae) [Traveller's joy, Klimop]; Landolphia capensis, Oliv. (fam. Apocynaceae) [Wild peach]; Triaspis Nelsoni, Oliv., Sphedamnocarpus pruriens, Planch., Sphedamnocarpus galphimiaefolius, Juss. (fam. Malpighiaceae); Rumex sagittatus, Thunb. (fam. Polygonaceae); Rhynchosia adenodes, E. and Z., Rh. crassifolia, Benth., Rh. monophylla, Schltr., Rh. nervosa, Benth. (fam. Leguminosae); Vigna vexillata, Benth., Dolichos lablab, L. (fam. Leguminosae); Tribulus terrestris, L. (fam. Zygophyllaceae); Tragia cordata, Harv. (fam. Euphorbiaceae); Rhoicissus erythrodes, Planch., Cissus lanigera, Harv. (fam. Vitaceae); Cryptolepis transvaalensis, Schltr., Pentarrhinum insipidum, E. Mey., Orthanthera jasminiflora, N. E. Br. (fam. Asclepiadaceae); Convolvulus sagittatus, Thunb., Conv. ulosepalus, Hall f., Ipomoea bathycolpos, Hall f., Ip. crassipes, Hook., Ip. oblongata, E. Mey., Ip. obscura, Ker., Ip. papilio, Hall f., Ip. sarmentacea, Rdle. (fam. Convolvulaceae); Solanum rigescens, Jacq., Sol. supinum, Dun. (fam. Solanaceae); Aptosimum depressum, Burch., Walafrida tenuifolia, Rolfe, Graderia subintegra, Mast. (fam. Crophulariaceae); Pretrea zanguebarica, Gay (fam. Pedaliaceae); Thunbergia neglecta, Sond., Crabbea nana, Crabbea angustifolia, Nees, Barleria macrostegia, Nees., Barleria obtusa, Nees., Blepharis squarrosa, T. Anders., Justicia anagalloides, T. Anders. (fam. Acanthaceae); Kedostris africana (Sond.), Cogn., Momordica balsamina, L., Citrullus pubescens, Sond., Citrullus vulgaris, Schrad., Cucumis Zeyheri, Sond., Trochomeria Hookeri, Harv. (fam. Cucurbitaceae); Dicoma anomala, Sond. (fam. Compositae).

Poisonous plants occurring round Pretoria are :—
Dichapetalum cymosum (Hook.), Engl. [Giftblaar].
Homeria pallida, Baker [Geele tulp].
Buphane toxicaria, Thunb. (Giftbol].
Acocanthera venenata, G. Don [Giftboom].

Noxious weeds round Pretoria are :—
Pretrea zanguebarica, Gay. [Devil's dish, Schapedoorns, Duivelsdis].
Tribulus terrestris, L. [Devil's thorns, Dubbeltjes].
Xanthium spinosum, L. [Boetebosje].
,, strumarium, L.
Bidens pilosa, L. [Black jack].

Nearly all plant families are represented in the Pretoria flora. Most representatives have the families Gramineae, Compositae (Senecio, Helichrysum, Nidorella, Dicoma, etc.), Leguminosae (Rhynchosia, Tephrosia, Indigofera, Acacia, etc.), Acanthaceae (Crabbea, Chaetacanthus, Justicia, Barleria, etc.), Asclepiadaceae (Asclepias, Schizoglossum, Pachycarpus, Raphionacme, etc.), Scrophulariaceae (Sutera, Striga, Nemesia, Walafrida), and Convolvulaceae (Convolvulus, Ipomoea). Showy flowers have the different species of Hibiscus (fam. Malvaceae), the Orchids (Eulophia, Habenaria, Satyrium), Gardenia and Pavetta (Rubiaceae), Ipomoea's (Convolvulaceae), many Asclepiadaceae, and most of the bulbous plants. The most common ferns are : Pellaea calomelanos, Link. ; Cheilanthes hirta, Sw. ; and Gymnogramme cordata, Schlt.

Farming.

CHAPTER X.

BACK TO THE LAND.

SOUTH AFRICA, in proportion to its population, has in its towns too many people who, whatever their ability and financial resources, lead lives that at best are not as profitable as they might be in such a country. The country needs a rearranging of its inhabitants' occupations. It needs producers of commodities, not merely distributors; it needs more people on the land, fewer behind the shop counter, the office desk, the lawyer's signboard, and the doctor's stethoscope. Then, and not till then, South Africa may be regarded with the large producers and may hope to export as they do.

It is a consummation much to be desired, and one not impossible of achievement. The Transvaal, for instance, is one of the greatest, if not the greatest, of mining centres; but rich as it is in minerals, it is even richer in farming resources. The enormous wealth which in a generation has been taken from the mines constitutes a toll few countries have yielded in a century, yet is less than what the farms, now

largely idle, may be made to yield. And what in this respect is true of the Transvaal generally is especially true of the Pretoria District, in or immediately around which are situated most of the best mines and many of the best farms in South Africa. Fifty years ago few realized the diamond wealth in and the gold and coal wealth immediately around Pretoria District; and its vast farming potentialities are only now beginning to receive attention. Progress there has of course been. But the farming of the district is still in its initial stage. Opportunities which in a few years may be gone are now obtainable. Land which under tobacco would be capable of returning £25 to £35 per acre per annum clear profit, and even more under citrus fruit, lies largely idle, or at best supports a few head of unprofitable, because nondescript, live stock. For every productive acre twenty are fallow; and in many instances the productive acre yields only a fraction of what, under improved methods, it could be made to yield.

The reason is not far to seek. The Transvaal is essentially a farming country, but a large proportion of its population is not a farming population. They are not farmers in the intensive sense that the rural populations of Denmark, Holland, and Switzerland are farmers, because other matters have mainly occupied them. The development of the country has not hitherto depended on the farmers. In the past the man with capital, and the man without, on the share market, and on the prospecting field, found lures greater than farming. The spirit of romance and adventure was excited. To mining and its ramifications, rather than to farming and its slower but surer returns, the people mainly turned. The mines were developed and the farms mostly neglected.

But those days are past. Mining has found its proper level as an investment, has become a stable, prosaic industry, from which the element of chance and the consequent gambling spirit have largely been eliminated. Fortunes are not now made in a week at a ratio altogether disproportionate to the capital and labour entailed; gambling has ceased, and farming is coming into its own. This it deserves. The soil generally is capable of a more prolific yield of a larger variety of crops, the climate on the whole is superior, and good local and oversea markets are nearer than is the case with many agricultural centres which have nevertheless been made to flourish. The only reason Transvaal farming is so largely undeveloped, and that it is undeveloped cannot be convincingly denied, is that its potentialities have not been sufficiently sought, not sufficiently turned to account, perhaps not sufficiently realized.

Of course, Transvaal farming is not all ease and profits. There are obstacles and hardships, disadvantages as well as advantages, failures as well as successes, because there are technically bad and indifferent as well as technically good farmers. There are those who have made or are making fortunes out of Transvaal farming. There are also those who, consciously or unconsciously, regard agriculture as a game of chance in which the seed are the counters on the random scattering of which the farmer can afford to stake his all, resignedly leaving to nature's vagary the point whether a grudging yield or nothing shall result. They do not do well, such farmers, in Pretoria or in any other district. To be successful a farmer must be capable. Farming is a profession in which, as in most professions, energy, intelligence, and good business

management, even more than money, count. With these almost anything, agriculturally and pastorally, may be done in the Pretoria District; without them, money will avail little.

Progressiveness in saving labour and reducing costs by the use of up-to-date appliances is, of course, sound. But it is not the expensive plough, cultivator, planter, or sheller, so much as the intelligence and energy with which they are used, the skill with which the soil is prepared, the care with which adapted seed are selected for prolific type and sure germination, the thoroughness with which the lands are weeded, and the enterprise in fertilizing, where possible—these are the conditions which secure, for instance, a good stand of heavy-yielding high-grade maize instead of the 40 per cent. to 50 per cent. stand of inferior cobs so often seen.

It is not the price of the land or the cost of the fertilizer so much as the continuous pains taken in the cultivation that ensures a field of high-class tobacco; and not so much expensive flue-barns as indefatigable attention, careful regulating, and ripe experience in the process of curing, grading, and packing, that secure a shilling a pound for the leaf instead of fourpence.

The well-bred, carefully selected, high-yielding, though small, herd, rather than the large herd of randomly-acquired cheaply-kept cattle, is the herd which, by careful observation to eliminate the unprofitable and by proper feeding and housing, pays best, either for slaughter or milking.

However good the farm, potato growing will be unprofitable, whatever money is put into it, whatever markets are at hand, if any kind of potato is planted

and carelessly marketed. But if a smooth-skinned, shallow-eyed, medium-sized, appetizing potato be grown, and by judicious fertilizing be made to yield heavily; and if it be sold, not when the market is glutted, as it may be one fortnight, but when prices are satisfactory to the grower, as they may be the next fortnight, then the possibilities of potato growing should be great, possibly as great as in Europe, where by intensive culture upwards of £1000 per annum has been made from a 30-acre plot.

Poultry pay, not by releasing on the farm a few hundred head of even prize fowls to fend for themselves, but by beginning modestly with a prolific strain, eliminating those that eat more than they return, breeding up from the acclimatized birds, feeding, housing, and tending the resulting flock properly, marketing the eggs quickly to preserve their bloom, and direct to avoid middlemen's profits and deterioration.

Similarly throughout the whole gamut of farming: hard work and deep thinking, rather than abnormal capital expenditure, are the essentials to success. These were the factors which in Denmark and Holland, where the original farming difficulties were greater than they are in South Africa, gave the small farmer a chance and made those countries foremost. They are the factors which by their presence will make, or by their absence mar, the South African farming industry; will give to the man of small capital but good capabilities a chance of rural livelihood, or will leave the land, as at present, largely tied up and idle. For until the average South African farmer abandons the idea that anything under 4000 acres is contemptible, and learns the economics of farming successfully on 400 to 800

acres, and in instances even on less land, he will be more a landowner than a producer, and South Africa will import instead of export.

Money, of course, the beginner must have; but in districts like that of Pretoria he secures from farming an immediate livelihood and the prospect of ultimate affluence for less initial capital outlay than would be necessary, for similar returns, in almost any other undertaking anywhere.

A man putting, say, £800 into a grocer's, chemist's, draper's, or butcher's business would ordinarily be content if it and his utmost exertions returned him and his family a living. He could not reasonably expect more. Combinations, competition, and trade conditions generally being what they are, he could not hope to expand his business much, at least in most situations. It is different in farming. Put into the soil, that capital would ordinarily give a much better return. It would give as good an immediate livelihood as in any business, and a surplus which in a few years secures to the farmer his house and lands, and enables him in time to expand his operations till something like affluence is attained. The grower of produce is producing the necessaries of life. He is always an essential. The distributor of produce is in one of the most overcrowded and largely artificial situations in life, the butt of competition, the victim of combinations and middlemen's cut profits.

When in South Africa this is more widely realized, it will be apparent that for the intelligent, active man with a little capital there are better opportunities in farming, or in learning to farm, than in almost any other occupation; and in the Pretoria District the

farming opportunities are as good as, and in some respects better than, in any other part of the country.

South Africa is naturally the richest and geographically the most favourably situated of undeveloped countries. It is now entering upon a wonderful agricultural era; and the Pretoria District is the district from which much of the ensuing prosperity will come. In Pretoria are situated the headquarters of the Union Agricultural Department, one of the best organized departments of its kind in the world; and in the district will be situated the National College of Agriculture. Pretoria District, in addition to its great natural endowments, has therefore the exceptional advantages, not only of a large market on the Rand, but of having within its boundaries the best of farming education, expert advice, and progressive example.

This is worth remembering by those who, oppressed by the contemplation of overcrowded trades and professions, are troubled by the problem of how to improve their own positions or provide careers for their youths. It is worth remembering by farmers dissatisfied with their present districts, and by farmers who, able to sell their present farms at tempting prices, are on the lookout for cheaper land which by development may become as good as or better than the southern farms they now occupy.

FACTS ABOUT PRETORIA FARMING.

The District of Pretoria is approximately 6525 square miles in extent. Roughly it may be divided into three zones, each of which has some farming peculiarity.

Farming.

The southern portion of the district, abutting on to the Witwatersrand, is typical of open South African sour veld, has a temperate climate, and somewhat severe frosts. Nearer the city of Pretoria the climate is warmer, the frosts later and less severe, and the veld mostly open. The northern portion of the district, cut off by the Magaliesberg Hills, is principally law-lying bushveld country, over a great portion of which the farming conditions are sub-tropical.

The rainfall for the whole of the district averages 27 inches per annum; the compositions of the soil vary; there is a good supply of surface water (river and spruit), as well as artesian water, which is generally reached at depths of from 100 to 150 feet. The altitude of the district slopes gradually from an average of about 5400 feet near Johannesburg to 3800 feet in the low-lying northern portions.

Hailstorms occur in all parts of the district, but not with the frequency or destructiveness characteristic of many districts in which farmers nevertheless flourish.

Locusts are no longer a serious menace. For some time they have given little or no trouble. Should they become threatening in numbers, it is felt that the Agricultural Department's Division of Entomology will be able successfully to cope with them.

In an area containing such variations of altitude, soil, climate, and on the whole such a sufficiency of water, production is naturally good and varies much, ranging from maize, oats, wheat, rye, lucerne, potatoes, peanuts, tobacco, citrus and stone fruits, to bananas, pawpaws, pineapples, cotton, fibre plants, oil-seeds, chicory, and possibly coffee, sugar, and rubber, as well as cattle, horses, sheep, ostriches, pigs, and poultry.

Maize is a payable crop and, according to variety, grows well throughout the district. Mainly along the northern slopes of the Magaliesberg, but also elsewhere in the district, first-class citrus fruit is grown. Magaliesberg leaf is the premier pipe-smoking tobacco in South Africa, and in most parts of the district excellent Virginia tobacco for cigarette making can be grown and sold at profits highly satisfactory to the farmer. Lucerne, especially where slightly irrigated, flourishes throughout the district. So do cattle, horses, pigs, ostriches, and poultry. Sheep may be farmed on a moderate scale in certain areas where the veld is well grazed by large stock; and stone fruits, including excellent table grapes, are profitably grown in the southern portions of the district.

The question of which portion of the district to prefer is therefore one requiring too many qualifications for a dogmatic answer to be safe. It depends upon the kind of farming to be undertaken.

Equally unsafe is it to suggest what kind of farming to undertake. That, again, depends on the farmer. The man whose capital runs into four or five figures has considerable latitude of choice. He can follow his natural bent, because he can afford either to wait for his returns, so long as they are ultimately good, or force returns from sources not open to the man with little capital. He could, for instance, sink the bulk of his capital in citrus orchards; and, until in three or four years his orchards started returning him tenfold what he had put into them, he could keep cattle or ostriches, breed horses, donkeys, or mules, or grow tobacco or innumerable other crops.

The man of small means cannot do this. His resources would be strained to make a start anywhere.

and he must make his start within the limits of those resources. He must not sink the whole of his capital in any one branch of farming that, through exceptional circumstances, may prove unprofitable in the ensuing season. His first returns must be quick and sure, rather than large. He should therefore start with maize as his main crop, and with mixed farming as his objective. For instance, he should during the first year or two grow, according to his means, 80 to 150 acres of maize, including a few acres for the ensilage pit; 10 to 15 acres of lucerne, beans, monkey-nuts, or similar minor crop; keep a few first-class milch cows, in a manner later to be indicated, and some poultry.

The return from citrus or tobacco is, of course, greater in the long run than from the other sources. But a citrus orchard yields nothing for the first few years, and tobacco culture necessitates considerable initial outlay for curing appliances, labour, and fertilizer to produce even 10 acres of leaf.

Whereas the man who has his land, either bought or leased; who has his ploughs, cultivators, and teams, and a moderate supply of native labour, personal energy and intelligence, by starting with maize, a little up-to-date dairying, a few small auxiliary crops, and some poultry, can secure a quick return that, though not affluent, is yet the means of immediate livelihood and something over. In the Pretoria District that something over will, if returned to the land year after year, increase faster than in any bank or other investment, and in a surprisingly short time enable the small farmer to launch out in such fortune-making branches as citrus and tobacco growing.

Whilst, therefore, the man of large capital, who is wise enough to put it into Pretoria farming, may follow his own inclinations and by intelligent application be assured of excellent returns, the man with small means would, in proportion to his means, have as good opportunities by starting modestly in minor branches of farming. What those opportunities are the following pages show in detail.

ENORMOUS PROFITS FROM FRUIT GROWING.

The Pretoria District may be divided, for fruit growing, into two zones: that which lies north, and that which lies south, of the Magaliesberg Range.

The southern area is less suited for citrus than for stone fruits, such as apricots, peaches, plums, and nectarines, as well as excellent table grapes, apples, pears, and figs. The stone fruits raised in this area are equal to the best from any other part of the country. So are the pears. The table grapes are excellent of their kind, and have the additional merit of being marketable, at good prices, early in the season before supplies from the Cape Province reach the Transvaal in large quantities. The apples, though possessing the desirable qualities of fair size and good flavour, do not keep as well as those grown in the eastern areas of the Province.

Over a considerable portion of the northern parts of the Province, notably on the slopes of the Magaliesberg Range, high-grade citrus fruit is largely grown, and can be grown in much larger quantities. For oranges and lemons the climate is as near perfection, and the soil as good, as could be wished for anywhere.

Were water more plentiful in this area, these fruits might be profitably grown in almost unlimited quantities, and as they ripen locally at the time of year when most of the oversea orchards are not yielding, there is an almost unlimited oversea market, and the South African facilities for reaching that market are good. As it is, there is sufficient water to warrant the assertion that nearly every farmer within this area and in several other areas of the Pretoria District will find citrus culture, on a large or small scale according to his means, extremely lucrative.

The citrus fruit which commands the best local and oversea prices, and is admirably suited for the district, is the Washington navel and the Valentia late orange. Both are hardy fruits and well suited for exportation. On the London market they have realized, wholesale, up to 6s. per dozen. This, of course, was a high price. But at a conservative estimate the average price may be calculated at 18s. per 150 well-grown and attractively packed oranges.

Compared with these selling prices, the cost of production is low. The initial expense of laying out an orchard and the cost of maintaining it subsequently are well within the means of most farmers. Assuming trees are planted 25 feet apart, 75 will be required to the acre. Young trees, yielding their first crops within four years after planting, cost about £15 per 100. The preparation of the land entails the expense only of ploughing deeply and cultivating, laying off for planting, and digging irrigating furrows.

Irrigating is essential. It is, in the Pretoria District, quite useless attempting to grow satisfactory citrus fruit for sale without a sufficient water supply. On

the subject of irrigating the citrus orchard no hard and fast rule can be laid down. To a large extent the irrigating necessary depends on the rainfall during the wet season. But it may be said, in a tentative way, that the soil should never be saturated with moisture. The roots of the trees should never stand in water, nor be allowed to dry. Possibly some six irrigations per annum should be sufficient, but it depends largely on how the irrigating is done.

The best way of applying water to a citrus orchard is by means of furrows led between the trees, the furrows nearest the trees being approximately not nearer than the off-side farthest spreading branches. On no account should water be applied to trees on the basin system—that is, accumulated in a hollow around the tree trunk. It is improper to irrigate the trunk of a tree, because the feeding roots are not near the trunk, but extended for a long distance in all directions; and when water is concentrated in a basin scooped around the trunk it draws the roots to the surface, whereas they should descend deep into the soil for their moisture and plant food. Otherwise they are enfeebled, and in time of drought die or at best diminish the fruit yield.

The furrow system is therefore the best. It has been proved. When irrigating is done by this system, the water should be made to soak into the ground as deeply as possible, the cultivator being then used to produce a mulch to shield from evaporation the water which has been applied.

In the Pretoria District the cost of maintaining a citrus orchard may be estimated at £3 to £4 per acre per annum, provided the grower does his own work,

with his own animals and with such labour as can from time to time, when circumstances permit, be detached from other operations on his farm. The hire of labour solely for the orchard is, except in the case of large orchards, comparatively costly and would considerably increase expenses.

Fruit in small quantities may be expected in three years after planting the orchard, if trees of the size indicated by the price of £15 per 100 were commenced with, if they were properly looked after, and if no untoward circumstances arose. In five years after planting, each tree should yield about 150 oranges or lemons, the yield thereafter increasing yearly until the twelfth or fourteenth year after planting, when the tree should be in full bearing, yielding 600 to 1200 oranges or lemons, according to circumstances.

Lemons also pay the grower well, but on the whole, perhaps, not as well as oranges, as the oversea demand is not so large and invariable. By lemon is meant the ordinary commercial lemon or lime. In most parts of the Pretoria District the tree is hardy and a prolific yielder. Many instances are on record of local trees producing in third year crops that averaged 30s. per tree, and as they mature they become still more profitable.

Naartjes have not been exported to any considerable extent, but there is a large local demand at prices satisfactory to the grower.

The grape-fruit is another citrus fruit from which good returns are obtainable. It is in large demand in Europe and America, and stands handling well. Pretoria samples were classed with the best of their kind on the oversea market.

A grower raising two or more kinds of citrus fruit is, of course, careful not to plant them indiscriminately in the same orchard, cross-fertilization being capable of confusing the peculiarities of each, so that the Washington navel orange may acquire the seed and properties of the lemon, and the smooth-skinned lemon the navel and less acidulous properties of the Washington navel.

With these reservations it may be stated, with a full sense of the responsibility incurred, that of the many money-making opportunities which the Transvaal has presented to investors, none have been more promising than those of the citrus industry. The fitness of such portions of the country as the Pretoria District for growing citrus fruits on a large scale, at huge profits, is nothing short of wonderful. This is not merely theory. It has been proved. The excellence of the fruit, the prolific yield of the local orchards, and the almost insatiable oversea and local demand at high prices have been fully demonstrated on commercial lines. At the time of the year when Pretoria orchards are yielding, the London market can take, in addition to the supplies from Australia, as much high-grade citrus fruit, at top prices, as the whole of South Africa can produce for many years; and there then remains the even larger European markets, and the fact that South Africa is nearer these markets than Australia or other similarly seasoned citrus producing rivals.

The glowing outlook for South African citrus culture is being realized. In the Pretoria District large orchards are being laid down, but much good land is still available at reasonable prices; at prices, indeed, startlingly low, when compared with prices in California and Florida or Spain, where similar and even inferior but

laid-out land, and land worked under climatic and labour conditions less favourable than in the Pretoria District, has fetched up to £200 per acre; whereas in Pretoria District it may still be obtained for from £2 to £6 per acre, virgin soil, of course.

So enormous has been the appreciation of citrus land outside South Africa, and so easily and cheaply may such land still be obtained in the Pretoria District, that those who invest now, and use the land to advantage, cannot but reap enormous returns. There is no longer any need for capital to lie idle or at best return from 6 to 8 per cent. from house or mine property. Invested in Pretoria citrus growing, it, under good security, returns much more.

FORTUNES IN TOBACCO.

The rapid and enormous mining development of the Transvaal made practical, as perhaps no other development could have done in the time, the extensive railway construction without which such great internal expansion could not have taken place. To the enterprise, ability, and success with which the mines have been developed the advancement and prosperity of South Africa must, therefore, largely be attributed. Mining is, and long will remain, our main industry. But the advancement of the country would probably have been greater, the prosperity wider spread, had that enterprise and ability been devoted less to mining and more to farming. For no mining profits, however gratifying, can compare, if the basis of comparison be initial capital outlay, working costs, and risks, with the profits, for instance, from tobacco growing. In the Pretoria District there are fortunes for the tobacco grower.

With average effort he can secure from 800 to 1000 lb. of leaf per acre; under intensive culture and expert handling, acres have yielded up to 2000 lb. of leaf each under conditions identical to those in Pretoria District.

When it is added that the total cost of growing and curing the leaf is from £10 to £12 per acre; that from 8d. to 10d. per lb. is usually obtained for good but not best leaf; that this means a profit of from £20 to £35 or even more per acre, and that at these figures the local demand for good leaf exceeds supply and is likely long to do so, it will be apparent that no £1000 put into mining ever returned, save under abnormal risk to the investor, dividends anything like those accruing to the Transvaal grower of tobacco.

Rustenburg, Piet Retief, Barberton, Zoutpansberg, and Potchefstroom are at present the principal tobacco growing districts in the Transvaal, producing large and increasing crops every year. The tobacco output of the Pretoria District does not yet equal in quantity that of these others, not so much because the Pretoria District is less well suited for tobacco growing, as because other almost equally lucrative branches of agriculture have in the past mainly occupied its farmers, and because much of its land is wholly undeveloped. The Government experts are emphatically of the opinion that over a large area of the Pretoria District tobacco can be grown as well as in the best districts outside.

No doubt instances are on record where tobacco growing in the Pretoria District has not been all that could be desired. Where failure has occurred, however, it should often be attributed rather to inexperience or

lethargy in the farmer than to inherent defect in the farm. For tobacco growing and selling is an art. It is an art for which only those with specialized training are fitted. It is not sufficient to grow a crop. The kind of tobacco crop for which there is a demand must be grown. The tobacco most required, at good prices, and of which large quantities are still imported, is a high-grade, bright yellow Virginia leaf for cigarette making.

That is the tobacco the grower, to make large profits, must grow successfully; and to grow it successfully he must know his business well. He must know how to produce a leaf of certain length and breadth, in which waste fibre is reduced to a minimum. He must, by proper fertilizing and irrigating, to the extent he does irrigate, know how to infuse into that leaf the essential oils which give the aroma and the pliability that permits handling in the warehouse with a minimum of powdering. And when the crop is reaped, he must, by assiduity and experience, know how to control the temperature in his flue-barns, know when to raise and when to lower that temperature, when to harmonize it with the fluctuating temperature outside and with the gradually dwindling moisture content of the leaf.

Hardly less important than the growing and curing is the packing of the leaf for sale. Many a grower two-thirds of whose crop was worth 8d. per lb. and the rest 4d. received the latter figure for the whole crop through neglecting, when baling the leaf, the vital precaution of sorting it into grades. Grading is of prime importance. The tobacco in each bale should be of uniform quality throughout, so that buyers may easily estimate the value of such bale. Otherwise a

bale is judged, not by the best leaf it contains, but by the worst. If the grading has to be done by the buyer, the expense of sorting and the deterioration through handling devolves on the grower as they would in the first instance, and in addition he gets a much lower average price than if he had undertaken that expense and labour at the outset.

But if the necessary precautions are observed, if the buyer's requirements and preferences are studied and met, and they are easily ascertained from tobacco growers' associations, average high prices may be expected by the experienced grower. And any energetic man of average intelligence can become a successful tobacco cultivator. If he has had training in other countries, it needs only to be slightly adapted for Transvaal conditions. If he has not had training, he can obtain it, at nominal cost, with Transvaal growers of repute, on Government farms, or in agricultural schools.

Where the prospects in tobacco growing are so good as in the Transvaal, it is natural to inquire why every farmer in suitable localities does not grow tobacco. The reason is clear and detracts nothing from the case for increased tobacco growing. In the first place, every farmer, assuming he has the right kind of soil, has not the experience, or the initiative, or the leisure to acquire experience to grow and cure tobacco successfully. And, in the second place, every farmer has not the rather considerable capital required to commence tobacco growing.

At the outset he must erect curing barns, either flue or air; they cost about the same, if properly built. If he can build his barns himself, they will cost about

£200; if he cannot build, he must pay a contractor probably more. For such an outlay, barns with a capacity for 10 acres of leaf could be erected. In addition the grower must employ at least one native labourer per acre, at a cost of from 20s. to 30s. per native per month. Then there are ploughs, cultivators, draught animals for tilling, fertilizers, and living expenses. So that, apart from the cost of his land, the tobacco grower must have at least £800 capital to start even on a small scale. In other branches of farming a small start, leading gradually to bigger operations, and culminating in tobacco growing, can be made with less capital; but the man who has the means can hardly find anywhere better returns for his money and labour than in Pretoria tobacco growing.

MAIZE: THE STEPPING STONE TO AFFLUENCE.

Pretoria District is admirably suited for maize growing, and where this can be said few farmers can afford to disregard the possibilities of the crop. It is a crop on which thousands of South African and oversea farmers depend mainly for their livelihood. The general demand for South African maize is enormous; and when, as sometimes happens, supply exceeds local demand, the oversea markets can be catered for at prices satisfactory to the grower.

In maize growing, as in most farming, there are ways of making and ways of losing profits. Some farmers obtain from three to five bags of maize per acre; others, under identical natural conditions, obtain from eight to twelve bags: instances have been known where an average of from fifteen to twenty bags per

acre over a considerable area have, by exceptional skill, been obtained. It depends mainly on the farmer.

The three to five bag per acre farmer may have done his best, but it was a poor best. He may have had a bad season; but in farming, estimates should be made over an average of, say, five years, taking the good seasons with the bad. On such a basis it may be said that if the three to five bag farmer did his best, it might well be improved upon, with a little experience, a little thinking, and a little extra exertion. A maize grower needs to know what his soil is capable of, and then needs to exert himself to get the utmost it will yield. He needs to handle his soil intelligently. It pays. This is as true in maize growing as in tobacco growing. Where, as in this country, most farmers have sufficient land to permit part of it to lie fallow, it is a mistake to use the same plot year after year for maize. It is a mistake, in the Transvaal, to defer ploughing until after the spring rains. It is better to plough after the late autumn rains, and to leave such ploughed land fallow until required for maize planting in the following spring. It may entail more labour and expense, but the increased crop will more than cover that.

If the ploughing be deep and thorough, say 15 to 20 inches instead of 6 to 10; if the seed be painstakingly selected to secure a prolific, good-selling strain, adapted to local conditions and of proved germinating powers; if care be taken to guard against cross-fertilizing from adjacent kaffir or other inferior fields; if trouble, even much trouble, be taken to replace infertile seed when the young plants are up (at least in small fields), and so secure a good full

stand, instead of the frequent 40 to 50 per cent. stand; and if cultivating be skilful and frequent until the cultivator can no longer be passed between the rows—then in the Pretoria District generally, as in the maize belt of America, there is no reason why an average ten to twelve bags per acre should not be obtained, and an even larger yield by fertilizing. Certainly these methods, whilst more productive, are also more expensive and more troublesome than methods which leave to nature responsibilities and exertions which rightly the farmer should assume. But the extra outlay is so much below the increased return that there can be no question of whether it pays to acquire skill and exert pains in maize growing; and when, as during months of 1912–13, maize sells locally for upwards of 18s. per 200 lb., there can be no doubt that in instances it pays to fertilize judiciously.

It pays, in fact, to go in for intensive culture. The difference in return from careful, as compared with careless, culture is enormous. The same amount of land is occupied; the amount of extra labour is, on an organized farm, hardly 50 per cent. different; the yield may be increased from 200 to 300 per cent.

When this is realized and acted upon, it will be clear that maize growing on a much larger scale than at present can be satisfactorily undertaken. Of course, selling prices fluctuate. But at a conservative estimate the Pretoria District farmer can generally rely on getting not less than 10s. 6d. per 200 lb. He should, as has been shown, obtain an average of at least ten bags per acre. Often he should get more. The cost of production varies, as the abilities of farmers vary; but, speaking generally, it should not be more than 4s. 2d. per bag of 200 lb., including price

of sack. At a low estimate, therefore, the profit should generally be not less than 6s. 4d. per 200 lb., or a little over £3 per acre. In many cases it should be up to £4 or £5 or even more per acre, if the crop is well grown and marketed with discretion.

There are, of course, risks. So, however, there are in nearly all enterprises. In the larger portion of the Pretoria District, however, the maize grower runs less risk than elsewhere. His growing season is longer than in most maize districts. Even when the rainy season commences late, he can generally reap his crop before the frosts. Or, if the rains commence very late, or if for some other reason early sowing is deferred or fails, he still has his chance with one of the rapid maturing varieties of maize adapted to the Pretoria District by the Government experts. Such types mature in from eighty days. They may not yet have been evolved to yield as prolifically as types taking upwards of 160 days to mature, but they turn into some degree of profit what in bad seasons and in other localities would be complete loss.

The acreage a Pretoria maize grower should handle depends, of course, on circumstances. Where his land and resources are limited, it should, however, be possible, by intensive culture of 80 to 150 acres of maize, and by mixed farming on the rest of his land, to make a comfortable living. It has not been proved practical in many cases, simply because it has not been properly tried. It is done oversea, notably in the United States, and has not been proved impractical in Pretoria District.

COTTON POSSIBILITIES.

Crops of excellent cotton have been grown variously in the Transvaal. The crop requires, during the five months' growing season, a rainfall averaging about 4 inches per month, decreasing as the bolls ripen, and succeeded by a warm, dry season for the picking. With such a climate, cotton grows well in almost any good or even moderate soil.

These conditions exist throughout the Pretoria District, and cotton growing on commercial lines is judged, by experts with oversea experience, quite feasible.

The demand for cotton is world-wide and practically unlimited. Probably three times the world's present output of cotton could be marketed, at prices satisfactory to growers on a large scale. So pressing, indeed, is the demand for more cotton that British manufacturers and cotton associations have become assiduous in fostering the increased growing of cotton within the Empire.

In Pretoria District cotton growing would yield a profit of about £4 per acre, from lint and cottonseed, which latter product yields a commercial oil and is excellent for feeding to cattle. As labour and transport became organized on the local cotton plantation, and the grower's experience increased, the profits would, no doubt, be greater. In some countries they are upwards of £10 per acre.

The picking of cotton, though entailing the greatest expenditure the grower incurs, is light work, and on oversea plantations is largely undertaken by women and children. Of course, there are cotton pickers and cotton pickers. The picker of experience may gather

upwards of 250 lb. per day, the inexperienced only 40 lb. Still, where a South African grower is near a kaffir kraal, or where the labour supply is not abnormally low, the picking should not be an insuperable difficulty any more than it is in East Africa. The local labour may at first not be efficient, but it would be very cheap. The labour is light and congenial and likely to attract workers.

Ginning for export could be done at one or other of the ginneries already in the district, and as the cotton production increases, so no doubt will the ginning facilities.

That large quantities of cotton are not grown in and around the Pretoria District is therefore not attributable to any insuperable obstacle, but merely to the fact that most farmers are embarked on a variety of mixed farming which, though it entails a larger initial outlay of capital, also returns a profit proportionately greater than that from cotton. Cotton, like maize, is a crop for the farmer starting with little capital. It is a good soil renovator, and in normal seasons entails little risk. And as the chances of failure in farming lessen proportionately to the variety of crops from which the farmer may chose when calculating the conditions, market and climatic, of the ensuing season, the potentialities of cotton growing deserve the attention of Pretoria farmers.

GENERAL CROPS.

Among other crops proved payable in Pretoria District—

Sisal hemp grows well; maple peas yield heavily in

winter, and could be grown as a rotation crop between plantings of maize. Wheat is grown successfully on the irrigable lands north of the Magaliesberg. Malting barley for beer has been tried successfully. Linseed thrives on the high veld. Mangels, sweet potatoes, winter oats, buckwheat, peanuts in the sandy soil of the north, soy beans, velvet beans for silage could all be made to pay.

PASTORAL.

Speaking generally, and taking as a criterion the percentage of mortality in live stock, the Pretoria District is singularly free from serious disease, and may be regarded as, on the whole, one of the healthiest portions of the Transvaal.

There is a certain amount of gall-sickness, especially in spring, after the first rains; but the district has been entirely rid of East Coast fever, although, of course, dipping is optional; and redwater is no longer a menace.

There is no glanders in the district, and little anthrax; and horses, as well as mules, are now successfully treated by Dr. Theiler's inoculation for horse-sickness, loss in the infrequent event of mortality being insured against by the Government on payment of a nominal premium calculated on the value of the animal; and biliary fever is now easily treated if taken in time.

The sheep of the district do not suffer from lamziekte, but are susceptible, especially when pastured

on rank sour veld, to internal parasites; and blue-tongue is prevalent to some extent.

Less loss from stock disease will be found in hardly any district. In other respects, too, the larger portion of the district is admirably suited for the raising, on a large or small scale, of cattle, horses, mules, ostriches, pigs, poultry, and, to a moderate extent on occasional areas, sheep. Where, however, soil and climate are so conducive to agriculture, the land, by being put under crops, can generally be used to better advantage than for natural veld grazing; and no progressive farmer would be so insensible to his opportunities as to leave a Pretoria farm undeveloped and used mainly for grazing. He would devote to stock only that portion of the farm beyond his resources to handle under crops; and he would, if progressive, not rest until he had enhanced the grazing value of that portion of his farm by sowing it as far as possible with the various excellent pasture grasses, many of which are drought resisting, and which the Government expert has now adapted to the district. In addition, if the farmer grew, as with little extra expense most farmers can grow, root crops for auxiliary feeding, and some acres of maize for the ensilage pit, he would no doubt make of his ranching a lucrative source of income. He would make profits beyond the highest conception of those who, content to let their stock depend on such sustenance as the natural veld affords throughout the year, run only that hardy native or slightly crossed type of stock in which productiveness is sacrificed to endurance—cattle which during the unfavourable conditions of winter and during times of drought have such a struggle for existence that for the best part of the year their energies are so absorbed in obtaining a

livelihood as to leave little capacity for productiveness.

The farming of such stock is farming of a kind, but it is not progressive farming. The farmer who expects profits from his ranching must avail himself of the dearly bought experience of oversea contemporaries. He must learn that ranching is a science. He must learn the wisdom of starting, on however small a scale, with only good stock. He must feed such stock, however distasteful the exertion, with something besides natural and often parched, unpalatable grasses, or he must esteem himself incompetent of farming successfully, incapable of meeting the stress of modern competition.

When he has acquired and applied this spirit; when by the expenditure of effort and intelligence he has secured and learnt how to maintain a good class of stock in good productive condition, whatever the season of the year, and whatever the nature of the season, he will have learnt the advantage of the ensilage pit, of growing root crops and pasture grasses and hay; and he will have become largely independent of droughts, and largely master of disease. He will have learnt that, whether for dairying or slaughter, it pays best to carry well-bred stock, though such stock require careful feeding, careful housing, and careful attention.

The proof of this lies in a little reflection. Like the implement through which maize is converted into the higher-priced commodity maizena, a cow, though not a machine, is the medium through which, in a comparatively cheap manner, fodder is converted into the more valuable commodity milk. The profitable cow

is therefore the cow which does this converting well, eats heavily, and, within reason, milks heavily. It is poor economy, if a cow has this capacity, to begrudge it the best of all it can eat. It is poor economy to acquire, however cheaply, a cow that has not this capacity. Only the high yielding cow should be kept. Such a cow certainly costs more to keep, even when its fodder is grown by the keeper, than the cheap, veld-fed cow. But it also yields more than the latter. The money spent for the cheap cow's purchase lies largely idle; the veld devoted to the animal's sustenance could be turned to better advantage. The one cow costs comparatively little to buy and keep, and yields proportionately less. The other cow digests large quantities of comparatively costly fodder, but turns it into the more valuable product milk, and the aim should be to grow and put through that cow as much as it can safely take. The success with which this is done depends as much on the farmer as on the cow. If the cow be defective, or if its food or housing be, the business is unprofitable, however good the farm; and the fault lies not with the farm but with the farmer.

Similarly for slaughter purposes it pays best to buy and properly feed well-selected stock. Such stock, by yielding a better quality and a larger quantity of beef, and by doing so in much less time than poorly bred stock dependent on veld grazing, give a return so much greater, and do it so much quicker, that the extra initial outlay, pains, and maintaining expense are more than amply repaid.

It is better to pay £40 and properly house and feed a cow yielding thirty bottles of milk per day for the

best part of the year than to pay £10 for a cow which, however fed, has not the capacity to yield more than six bottles of milk a day, for a few months a year, when milk is plentiful and proportionately cheap. And it is better to breed from expensive, but in the long run cheap, stock that will give a calf which, by proper feeding and care, will in from three to four years scale from 1600 to 1800 lb. of prime beef than to breed from initially cheap, but in the long run dear, stock, producing a calf which, on natural veld feeding, will in from six to eight years scale 1000 to 1300 lb. of inferior beef. Pound for pound of initial outlay, the return from good stock is proportionately greater than from poor stock; and the capital takes only half the time to produce that return.

The poorer method may have suited conditions when land was cheap and abundant, when stock were left to thrive or die as nature dictated, when the farmer took life easily, content with small or no profits, markets being few and remote, so long as he might live at peace, exertionless. But times have changed, and with them methods. The age is a progressive one, and none but the progressive can hope to succeed in it. Switzerland, Holland, and Denmark could not have become the dairy countries they have become but for the fact that there has been a rigid elimination of mediocre stock. The herds have been graded up to return the most for what they cost. South African farmers, excepting in the remoter districts, must do the same or succumb to the competition of progressive oversea farmers. Already the position is that, a pastoral people though we pretend to be, we do not supply our own needs in milk products, such as butter, cheese, condensed milk, and cream. We allow oversea farmers

to do so. Not because South Africa is less suited for dairying than other countries, but merely because its grand potentialities are not, excepting in a comparatively few cases, properly handled.

The oversea dairyman captures not only surrounding markets, but actually competes in South Africa, not because he has some Divine assistance, nor because he has better natural resources, but because he works hard and understands his business. He has realized that it pays to work only first-class stock, and he has learnt how to handle them. He works and thinks and compels every one associated with him to work and think. And until more than a small minority of South African dairymen do that, their efforts may be regarded as recreation, hardly as serious business. Until they work and understand their business, until they select their herds for specific purposes, cows that will give milk, not acquire fat, steers that will fatten, not meditate and languish; until they feed and house such stock to force them to their utmost yield within reason, and study each individual animal to eliminate the unprofitable; until they do that, instead of taking what stock chance or heritage has entailed on them, and leaving it to the vagaries of nature, to the inclemency of the veld, and the inconsequence of the Kaffir herd and milk boy, they will continue to find the large local butter and cheese market not worth wrenching from the outsider, and the selling of milk at excessive prices in adjacent towns only just worthy of attention.

But if South African cattlemen will profit by the experience of other countries, will by the discriminate purchase and the scientific handling of herds produce the quality and quantity of milk and beef desired, instead of an absurd quantity of milk per cow and

beef that is endured but seldom enjoyed, they will make cattle pay on even small holdings, for they can then capture not only the South African market, but face competition oversea, as New Zealand and Australia do. Then, but not before, we may expect to see beef, butter, and cheese being exported instead of imported. The laden dairy trains will then resound through our railway depots, the countryside, partitioned into small, instead of 5000-acre, farms, will then respond to the industry of the many instead of being silent and largely unproductive.

For those who have realized and will act upon these precepts, the raising of cattle in the Pretoria District offers excellent opportunities. For those who require 20 to 30 acres for each head of stock, the opportunities are not so good.

SHEEP.

In a country like South Africa, many portions of which are so admirably suited for the production of wool and mutton, the Pretoria District cannot be pronounced as eminent for sheep farming. For sheep the district may be divided into two areas. The southern area, abutting on the Witwatersrand, consists mainly of sour veld, and is on the whole unsuitable for sheep farming on a large scale. The northern area, abutting on the Middelburg District, carries a fair amount of sheep where the veld is open. In both areas the grasses, especially in the wet season, are liable to become very rank for sheep; and the sheep, unless very well cared for, are liable to blue-tongue and internal parasites.

On the whole, therefore, the district is not noted for its wool or mutton possibilities. But sheep breeding on a small scale may be made profitable on some farms, especially if, as recommended, teff or similar grasses for general purposes, including sheep pasturing, are laid down.

POULTRY FOR PROFIT.

Where so many kinds of stock and crops can be raised, and mixed farming is the consequence, it pays, especially the small farmer, to keep poultry. The capitalist, who has the means of taking up extensive citrus, tobacco, or stock raising; who deals in thousands, not in hundreds, when calculating his returns, is working on a scale which places poultry beneath notice. There are few, if any, local cases on record where large poultry farms have paid, but the farmer whose financial limitations resign him to contentment with a livelihood as a start, and better things gradually, will in most cases find that, as an auxiliary to his main branches of farming, a few hundred head of poultry considerably accelerate progress.

Fowls, especially, are or can be made profitable for laying or for table use. Good eggs and good table birds are always in demand, whatever the importations. It is the small, the watery, the partly discoloured egg, not the large, well-flavoured egg with the bloom still on, that does not retail above the shilling per dozen which long-stored eggs fetch. It is the stringy, non-descript bird that depreciates the price of the coop to little above what the railage cost. But such eggs and such birds are not produced by farming. They are the products of chance—the yield of flocks which, by

incessant inbreeding and by the necessity for fending for themselves, have been so enfeebled or are so occupied in scratching that the forming of succulent flesh has become an impossibility, and egg-laying passed from a regular business to merely a spring pastime.

Throughout the country poultry keeping has often been found unprofitable. So it is when carried on, not as a business, but as an affair that can look after itself or at best be tended by the incompetent. Unselected, unadapted, unattended poultry will not pay; but neither would citrus or tobacco farms if mismanaged. It takes experience and skill to produce good eggs and good table birds, but not more than the average farmer, with the assistance of his household, can usually spare from his other branches of farming.

It is well to start on a small scale, to select even as few as twenty or thirty birds, of a prolific laying strain like Leghorns for eggs, or Cochins for the table.

They must first be adapted to the particular locality. They must then be studied. The hen is an egg-laying apparatus and should be regarded and regulated as such. Some hens, whatever their condition and breed, lay worse than others. Only the birds, therefore, with active habits, a large food capacity, and the ability regularly to turn that food into good eggs should be kept. The others, however fine their plumage or gait, should be rigidly excluded.

From the eggs of the hens so selected the flock proper should be incubated; it will then be born to its environment, and fitted for it. The resulting flock should be kept to such a size as can be handled efficiently. Hens should be pen-fed and fattened for table use after laying for two years, except those with unusually good

laying characteristics, which might be separated and kept in the breeding flock to replace the drain from the laying flock.

The laying hens should be separated from the male birds when the eggs are for sale, so that, unworried by untimely attentions, they may the better devote themselves to the business for which they are kept. Eggs for consumption are in any case the better for being unfertilized.

The laying, as distinguished from the breeding, hens should then be forced, within reason, to their utmost laying powers. Those powers should be considerable, if a prolific strain has been bred from, and may be maintained all the year round by creating the conditions of the natural laying season, i.e. spring. This is possible by feeding and housing the hens properly ; by feeding with the food peculiar to spring—a good and varied assortment of grains, plenty of green stuff, wholesome shredded meat in place of worms and insects, and an abundance of pure water, not too cold and not too warm. An egg contains a large percentage of water, which the hen must drink, and drink, if its productiveness is not to be disturbed, without having its egg-laying economy impaired by chill or filth.

The runs should be quiet and secluded, shaded from the summer glare, and sheltered from the chills of winter.

The collecting and the handling of the eggs is hardly less important than their production. They should be gathered as quickly as possible from the nest, stored in a dark, cool place away from all taint. They should be dispatched to the consumer as soon as possible, not

packed in sawdust or other contaminating material, but in partitioned boxes. Eggs, as their shells are porous, are easily contaminated. In improper packing, or when kept long, or exposed to the light, or handled much, they deteriorate, lose their bloom, and fetch poor prices, which are further reduced by middlemen's charges and by the competition of similar deteriorated eggs from abroad.

By producing a good egg, by ensuring that that egg shall reach the consumer at its best, fowls can be made to pay in a district like that of Pretoria, which has the large Johannesburg market practically at its door, where good eggs fetch good prices from consumers such as hospitals, nursing homes, the better-class hotels, and restaurants, as well as from private households, all of whom may be reached cheaply and quickly by the " Collect on delivery " system of the Railway Department.

PRETORIA DISTRICT: FARMING STATISTICS.

The following figures from the latest (1911) Census help to substantiate (as far as they go) the various conclusions drawn in this chapter :—

The arable land of the district was occupied as follows :—

Cultivated.....	82,306	morgen.
Fallow.....	15,162	,,
Grazing.....	1,160,027	,,

Of the cultivated land the following areas were used for the crops mentioned :—

Wheat.....	3,829	morgen.
Oats.....	4,952	,,
Barley.....	325	,,

Mealies	25,749	morgen.
Kaffir corn	568	,,
Rye	13	,,
Peas	61	,,
Potatoes	956	,,
Sweet potatoes	94	,,
Pumpkins	391	,,
Tobacco	206	,,
Lucerne	365	,,
Ground-nuts	44	,,

The yield was as follows :—

Wheat	muids	35,690
Oats	,,	8,531
Oat-hay	lb.	17,069,176
Barley	muids	1,067
Green barley	bundles	269,197
Mealies	muids	273,793
Kaffir corn	,,	37,491
Potatoes	,,	36,905
Pumpkins	No.	331,517
Tobacco	lb.	558,884
Lucerne	tons	1,500

In addition, the following fruit was produced :—

	NUMBER.
Apricots	7,451,272
Peaches	32,189,976
Plums	1,840,344
Nectarines	63,890
Apples	1,983,282
Pears	764,420
Oranges	4,612,118
Naartjes	891,048
Lemons	540,934

		NUMBER.
Pompelmoes		39,070
Citron		14,485
Banana		15,600
Almond	lb.	1,032
Walnut	,,	3,246
Figs		91,357

and about 40 tons of various dried fruits.

The district contained the following live stock :—

Cattle	152,020
Horses	5,732
Asses	11,082
Mules	2,999
Ostriches	427
Sheep	150,727
Goats	141,235
Pigs	33,610

Of the cattle, 15 head only were imported; of the goats, only 5168 were Angora; and of the sheep, 35,822 woolled, and of those only 8893 were Merino.

The herds were made up as follows :—

Bulls	4,490
Cows	58,740
Oxen	44,769
Other	44,021
	152,020

The yield from the cows was as follows :—

Milk	gallons	136,000
Butter	lb.	36,160
Cream	,,	17,321
and only		
Cheese	,,	15

Farm workers employed :—	
Males	9,478
Females.....	1,293
	10,771

Of these 3489 were white males, 855 white females, 5656 South African native males, 406 females, 365 other coloured races.

LAND AVAILABLE.

There are as good farming opportunities in the Union as anywhere outside, and no one need go elsewhere for land. Such are the farming potentialities of the Pretoria District, however, that most of the farms have been taken up by private owners; but there is still some Government land obtainable, or likely to be obtainable in the near future, and privately owned land is obtainable at prices which, considering the productiveness of that land, are extremely low. When desired, the Government assists farmers to acquire such privately owned land. Section 11 of the Land Settlement Act, No. 12 of 1912, empowers the Government to purchase such land at the request of an intending farmer, provided the intending farmer is prepared to contribute at least one-fifth of the purchase price of such land. He may then pay off the rest of the purchase price, plus incidental expenses, in forty equal instalments, payable half-yearly.

This Act also contains a provision whereby the Government may allot Crown lands to applicants who possess, in the opinion of the Minister of Lands, sufficient working capital to enable them to develop and

work such lands beneficially. Each allotment will be made on a lease of five years, with the option of purchase during or at the expiry of that period. No rent will be payable in respect of the first year, but in respect of the second and third year 2 per cent. per annum, and in respect of the remaining two years 3½ per cent. per annum will be payable on the purchase price of the holding. When the option of purchase is exercised, the purchase price, together with interest at the rate of 4 per cent. per annum, will be payable to the Government half-yearly in advance by forty equal instalments.

Full particulars in regard to the land to be allotted will from time to time be published in the *Union Gazette ;* a notification will also appear in the principal newspapers.

Under this Act the Government may also advance to lessees of holdings an amount not exceeding 50 per cent. of the total value of the improvements effected by them on their said holdings for the purpose of purchasing stock, seeds, implements, and other farming requisites, such advance not to exceed £500. Each advance is repayable within five years at 4½ per cent. per annum interest.

LABOUR.

As in the rest of South Africa, so in this district, there is no surfeit of native labour ; but the Pretoria District has this advantage, that owing to the natives' preferences for working on the mines and railways, which pay good wages, natives from all parts of the country trek through the district to the adjacent mines and railway bureaus, with the result that they may

often be diverted from their original intentions and recruited by the local farmers. There is also a considerable native population resident in the kraals of the district, and this large potential labour supply is largely protected for the local farmers to draw upon by the fact that the recruiting of outside native labour agents is to a considerable extent debarred.

LAND BANK.

The great boon which the establishment of a Land Bank has been to South African farming is very noticeable in the Pretoria District. The loans from the bank have enabled local farmers to make many improvements; the stability of farming has increased; land values have improved, and a degree of prosperity has resulted that, without the aid of the Land Bank, would have been deferred for many years.

The object of the bank is to aid deserving farmers in the development of their farms. The business of the bank is—

(*a*) to advance money to farmers on mortgage of land within the Union;

(*b*) to advance money to, and to guarantee the performance of contracts by, co-operative societies;

(*c*) to advance money to farmers holding land under agreement of purchase from the Crown, or holding land from the Crown under a lease the unexpired period whereof is ten years or more;

and generally to make all such advances and do all such acts as the bank may be authorized to make or do by Act of Parliament.

Advances are made by the bank for all or any of the following purposes :—

(1) Improvements, in which term shall be included farm buildings, fences, tanks and other structures for the dipping or spraying of stock, the clearing of land for cultivation, the blocking of sluits, dongas, and water-courses to prevent denudation of soil, and the planting of trees, orchards, vineyards, sugar-cane, and tea.

(2) The purchase of stock or plant of all kinds and of agricultural requirements generally.

(3) The discharge of existing liabilities on land or, in special circumstances, any other existing liabilities.

(4) The payment of costs incidental to the subdivision of land held in undivided shares.

(5) The establishment and promotion of agricultural and rural industries, including, in addition to other such industries, tobacco, dairy, and like industries, and the cultivation, sale, and exportation of fruit.

(6) The purchase of land for any of the purposes described in paragraphs 1, 2, and 5 of this section by a person or group of persons whose financial resources are deemed adequate to carry on a purpose described in any of those paragraphs.

But no advance shall be made by the bank for the purpose of any such irrigation, water storage, or boring work as may be made the subject of a loan under any loan relating to irrigation or conservation of water.

Loans are made (*a*) upon the security of freehold and quitrent land, to an amount not exceeding 60 per cent. of the agricultural or pastoral value thereof

(*b*) upon the security of Crown land, to an amount not exceeding 50 per cent. of the purchase price already paid; (*c*) upon the security of land held under lease from the Crown, to an amount not exceeding 50 per cent. of the value of the lessee's interest in the lease. In every case the value will be determined by the Board.

Loans under (*a*) are granted for a period of thirty years. During the first five years interest at the rate of 5 per cent. is payable, and the capital may during that period be reduced by instalments of £5 or any multiple thereof. At the end of five years the balance of the loan will be repayable within a period of twenty-five years, by half-yearly instalments, consisting of capital and interest, each instalment, except the last, being at the rate of £3. 10s. for every £100 of the loan.

Loans under (*b*) and (*c*) are repayable within a period of five years.

Except in special cases, no advances are made for amounts of less than £50 or more than £2000.

The headquarters of the bank are at Pretoria. Its officials, and magistrates throughout the Union, will furnish fuller information on application, and render all necessary assistance in the completion of forms of application, etc.

Mining.

CHAPTER XI.

GREAT though the Transvaal mineral output has been for years, it has by no means reached its maximum. It increases every year, and shows every tendency of increasing at a more rapid ratio as the deposits worked show no signs of petering out, speaking generally, and the deposits unworked and untested are many.

It has been shown, in a previous chapter, that large though this mineral wealth is, the farming potentialities are even greater, but largely undeveloped, as the tendency has been mainly towards mining. This tendency has resulted in widespread prospecting throughout the country, and in the vicinity of Pretoria deposits have been discovered of diamonds, tin, iron, gold, silver, lead, coal, and calcareous formations for making lime and cement. Millions are now taken annually in diamonds from the vicinity of Pretoria, hundreds of thousands in tin and in coal; and the recent discovery of a large deposit, not of titanium iron, but of a superior more easily worked iron-ore suggests an additional mining industry of considerable importance.

But considerable though the prospecting has been, and satisfactory though the results, it has been neither systematic nor conclusive. Many portions of the district are still unproved geologically. There may be near Pretoria undiscovered diamond mines as rich as the Premier Mine, or tin and coal fields as valuable as those of Potgietersrust and Witbank. There is still considerable need for mineral research in the Pretoria District, as the details given under each of the following specific headings will show.

Diamonds.

A diamond pipe gives no surface indications of its presence, except the actual diamonds and garnets near it, and is therefore extremely difficult to locate; and so infinitesimal is the proportion of diamonds to the tonnage of earth worked to disclose them, even in a payable mine, that when a pipe is located it is almost impossible to judge its payability conclusively, except by extensive working.

The result was that, though ten years ago there had been a good deal of diamond prospecting in the district without a payable mine being located, this was not evidence that such a mine did not exist, as the subsequent discovery of the Premier Mine proved. And though to-day the Premier Mine remains the only payable diamond mine in the district, this by no means proves that there are not other payable pipes waiting to be discovered. On the contrary the inference is, as experience has taught in Kimberley, that where one payable pipe exists others are probably in the locality, requiring only operations sufficiently extensive to prove their payability.

There is consequently little doubt that more pipes than have been proved payable exist in the Pretoria District; that some of them may be extremely rich; and that, therefore, increased diamond prospecting on systematic, scientific lines would be justified.

The Premier Diamond Mine, situated twenty-four miles from Pretoria, is to-day one of the largest mining ventures in the world. Probably more tons of ground are handled in it than in any other single undertaking except the Panama Canal construction. As much as 40,000 loads (i.e. tons) have been worked in one day. During 1912, 9,979,716 loads were handled, yielding 2,047,185 carats, valued at £1,909,564.

Upwards of 1200 white men and 17,000 Kaffirs are employed by the company.

The mine is worked open-cast and is approximately 996 yards long by 483 yards wide and of a depth ranging from 200 to 300 feet.

Apart from this mine, some twelve diamond pipes have been located in the district, but up to the present none have been proved payable. Alluvial diamonds are also found alongside most of the streams flowing from the neighbourhood of the Premier Mine. From these various sources and the mine the total output for 1912 was 2,049,767 carats, valued at £2,207,700, an increase over the previous year of 244,563 carats, valued at £569,803.

It is figures such as these which emphasize the mineral progress and the vast potentialities of the Pretoria District.

Tin.

As in the case of diamonds, so with tin, prospecting has been extensive, has resulted in the location of large

deposits, some of which are at present yielding handsome returns, but the district as a whole has not been exhaustively prospected. The tin deposits found are probably only an iota of what may yet be found. New discoveries of tin-bearing rock are continuously being made, and with increased operations, both mining and prospecting, there is every likelihood that the tin industry is destined to become one of the important permanent assets of the Transvaal.

Red bushveld granite, the matrix in which the celebrated Transvaal tinfields occur, begins at the Pyramids, some twelve miles from Pretoria, and stretches northwards indefinitely. The tin mines now worked are situated about seventy miles north of Pretoria, where they form a line beginning at Rooiberg on the west and ending at Potgietersrust on the east, a zone about 100 miles long. The output for 1912 was 2948 tons of concentrates (cassitarites), valued at £370,000.

At the Rooiberg end of the zone the tin occurs mostly in veins and fissures, as in other countries, but in the Potgietersrust locality it occurs in a very peculiar pipe-like formation which has given rise to much geological controversy.

Iron.

Much has been written, and more talked, about the potentialities of the Transvaal iron industry. The general contention is that our large deposits of iron-ore could be profitably worked, being situated, as they are, if not near, then at least within, economic reach of satisfactory coking coal and lime deposits. It has been urged by many that, whilst no doubt the percentage of titanium in much of this ore makes it too

refractory for blast furnaces, the difficulty has in Europe been overcome by using electric furnaces; that such a plant, though costly, should not be impracticable in a country importing annually shoes, dies, steel rails, trucks, wheels, and fencing standards to the value of more than a million sterling; that the power for such furnaces could be generated cheaply where coal is so cheap, or possibly along some stream; and that, therefore, enterprise only is required to establish a local iron industry on substantial lines.

The argument is neither conclusive nor convincing. In it the point is overlooked that while the suggested electric furnaces, though not tested with our refractory ores, might be successful in the Transvaal, the large initial outlay for their installation would be prohibitive in a country where markets are so restricted. However successfully refractory ores might be turned into pig-iron and steel by costly electric processes, it would be impossible, without protection, to compete, except in a very restricted area, with steel and steel products from America, Great Britain, and Europe, where manufacturers work on so much larger a scale than would be possible here, that in open competition, or in face of our present Customs tariff, they would continue to hold, against a Transvaal ironmaster seeking returns for his huge outlay on electric furnaces, the South African market as far in nearly as the Free State border on the one side and the Natal border on the other. And by reducing prices, as they doubtless would do, they could hold probably the whole market.

Certainly the duty on imported steel might be raised. But it would have to be raised much to be effective. And such a necessity would be the proof that our

titanium iron, even if it can be successfully treated in electric furnaces, can be worked only by bounty. Of course, a kind of bounty is being given in Canada and Australia to support the young iron industries there, and something of the kind might be feasible in South Africa. That is a national question on which opinion is divided. But to protect the iron industry through the Customs would be to bolster it at the cost and to the detriment of more important local industries, at least until such time as the economic position of South Africa becomes very different to what it now is.

The whole matter was thoroughly inquired into at the instigation of the Transvaal Government in 1910 by Mr. F. W. Harboard, one of the leading European experts on iron smelting. His report was unfavourable. It may be found in full attached to the 1910 report of the Government Mining Engineer.

But that does not dispose of the possibility, nay, probability, of starting an early Transvaal iron-ore smelting industry. Since those reports were issued a very superior ore has been discovered some sixty miles north of Pretoria, in the vicinity of the farm Leeuwkraal, showing, again, the almost infinite mineral possibilities of the district if adequately prospected.

Considerable development is confidently expected from this discovery, as the quality of the ore is excellent and the quantity visible very large. Such an ore will prove workable if it can be smelted in blast furnaces, because such furnaces can be erected as small or as large as the market warrants the output being. Such an industry would not require a capital altogether out of proportion to the probable dividends.

Gold.

Near Pretoria one or two small gold mines are being worked in quartz veins in the dolomite, but though of geological interest, they are unimportant commercially.

Silver.

The above remarks apply also largely to silver. Very rich bonanza of argentiferous copper-ore was at one time worked at the Willows, six miles east of Pretoria, but work has long since ceased.

Argentiferous lead ores also occur in the dolomite south of Pretoria and at Edendale, fifteen miles east. At the latter place a mine has been working more or less successfully for several years past. During 1912 it was worked for only a few months and yielded 141 tons of lead, valued at £1436.

Still further west another argentiferous lead mine was at one time worked under the name of the Transvaal Silver Mine. It has been shut down for some twenty years and the sides have completely caved in; but its richness may be judged from the fact that dumps which were washed over in 1912 yielded 1979 tons of lead, valued at £7000, and silver valued at £5000.

Coal.

Coal has been located twelve miles north of Pretoria, immediately on the far side of Pyramids, and from there extends, with breaks, all over the bushveld, up to the Waterberg Range.

Up to date these coal deposits have not been worked, as supplies from Witbank are of better quality and can hardly be undersold.

The Witbank Coalfield starts at Balmoral, east of Pretoria, and stretches as far as Belfast. It is, however, not a continuous sheet, as erosion has exposed the underlying formation in valleys; but, speaking generally, the tops of the bults or downs are covered by coal, while vleis or valleys lie beneath, giving a curious lace-like pattern to a geological map of the area.

The coal from this field amounted in 1912 to 3,587,481 tons, valued at £777,225, being an increase of 250,000 tons, valued at £19,837, over the previous year. Over 35,000 gallons of tar were also obtained, and used mainly for street repairing in Johannesburg. 400 white men and 7149 natives were employed during the year.

Coking Coal.

It was formerly thought that South African coal was entirely unsuited for coking purposes. This theory has now been proved wrong. In 1911 the Government sent to Britain six samples of 10 tons each taken from representative collieries of the Province. These were tested under ordinary conditions at Middlesborough, in England, under the personal supervision of Mr. Harboard, the eminent expert formerly mentioned. The results were surprisingly favourable. Details may be found in a pamphlet issued in 1911 by the Department of Mines, entitled "Coking Tests of Transvaal Coals."

Cement.

The only cement factory in South Africa is established in the Pretoria District. It produced 62,745 tons of cement during 1912.

The cement equals in quality any imported Portland cement, though it requires slightly different treatment. That the industry is profitable is proved by the fact that for several years past the company has paid dividends of nearly 40 per cent. per annum, and is now establishing subsidiary factories at points nearer the coast to compete more extensively with the imported article; for, as in the case of iron, cement can be brought from London to a South African inland point as far north as Beaufort West, in Cape Province, as cheaply as from Pretoria to that point.

Attached to the cement factory is an industry known as the Concrete Construction Company, which produces concrete shapes of every description, from sheep troughs to pulpits, but chiefly hollow blocks for building purposes. The company possesses the most advanced American plant obtainable, and its manufactures are equal to any imported.

Clays.

At Olifantsfontein, eighteen miles south of Pretoria, the Consolidated Rand Brick, Tile, and Pottery Works are situated. These turn out not only ornamental brick and tile work, but every description of domestic earthenware and chinaware.

Salt and Alkali.

What is known as the Pretoria Saltpan is situated twenty-five miles north of the city. It is one of the geological enigmas of South Africa. To all appearances it is the crater of an extinct volcano, the bottom of the crater being some 400 feet below the rim and 200 feet below the surrounding country. The floor of this crater-like depression is occupied by a pan, covered

in the dry season by an incrustation of salt and alkali, which is sub-layered by a 10-feet deposit of pure natron or native carbonate of soda.

A borehole sunk 170 feet in this pan disclosed nothing but alternate layers of mud and salt. The banks of the pan and the crater itself consist of bushveld granite, and not a trace of pumice or other volcanic ejector can be found in the neighbourhood. Apart from its geological significance, the spot is an extremely pretty and interesting one, well worth visiting by every one in search of the picturesque.

An alkali industry is now being started in Johannesburg to absorb the natron excavated from this pan in dry season.

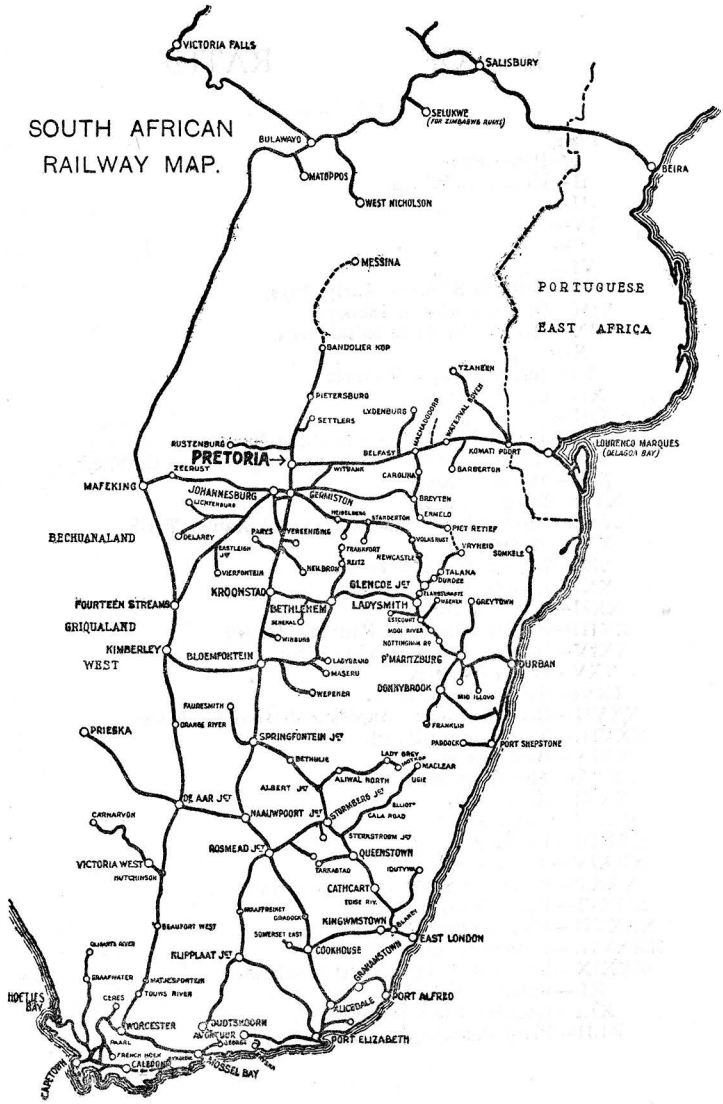
Chrome Iron-Ore.

Beds of chrome iron-ore have also been found near the Pyramids. Up to the present no serious work has been done on these beds, as the visible outcrop contains less than 40 per cent. of chromic acid. It is, however, possible, and even probable, that richer beds may be found by prospecting beneath the sub-soil, as has been the case in Rhodesia.

Manufacturing.

As Pretoria is exceptionally central, is extensively connected by rail, is the centre of an extremely rich mining and farming area, has a huge market on the Rand, is within economic reach of Natal and Rhodesia, as well as the port of Delagoa Bay, the opportunities it offers for industrialists of all kinds are unusually good. There, if anywhere in South Africa, manufactures of certain kinds may be established successfully. Splendid sites, abundant water supply, and electric

power if desired will be supplied by the Municipality to manufacturers at reduced rates. Large quantities of raw materials are produced in the districts; huge quantities will soon be produced, especially if there are local factories to absorb such raw material. To Pretoria, therefore, manufacturers should turn attention.



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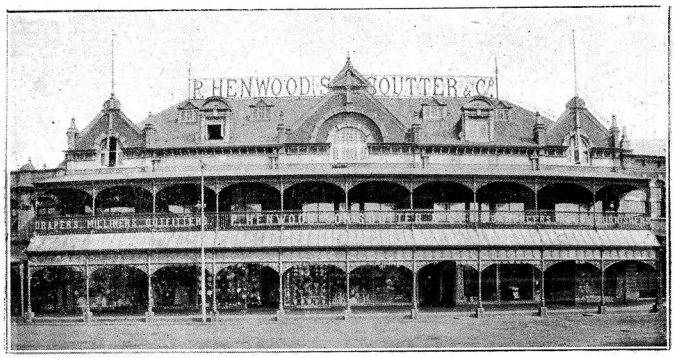

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