

2 1943–1952 A SECOND CHANCE

DURING THE WAR years South Africa appointed a number of special civilian officials to prepare the country for all eventualities. They included a Price Controller, a Controller of Imports and Exports, and Tommy Stratten — seconded from Union Corporation — as Director General (Technical) of War Supplies. There were also controllers of various strategic commodities, among them a Paper Controller who turned out to be the Government Printer under another hat. As Paper Controller he was given wide powers over the whole paper industry and was expected to steward available supplies for the good of all.

At first, paper control was directed at imports. Shipping was at a premium, so the only paper stocks allowed in from outside were types that were in short supply and could not be made locally. In consequence Enstra was besieged by customers who ordered far more paper than the mill could deliver. As it was, Enstra was producing paper at the rate of 11 000 tons a year, well down on the 14 000 tons it had been designed for but all it could manage in the face of its production difficulties. To help ease the pressure, the Paper Controller urged users to consume paper more sparingly.

Setting an example, the Post Office introduced half-size postage stamps to cut down its consumption of gummed paper. The wine industry identified bottles with paper strips instead of the generous labels favoured before the war. Many businesses converted to half-size stationery, and envelopes were used again and again. Virtually all printed material was set in smaller type than would have been normal. At S A Pulp, as at many other companies, this affected the annual reports sent to shareholders, which were downgraded to single sheets carrying the chairman's remarks and relevant accounts.

Feeding logs to a chipping machine in Enstra's wood preparation plant, c 1943.

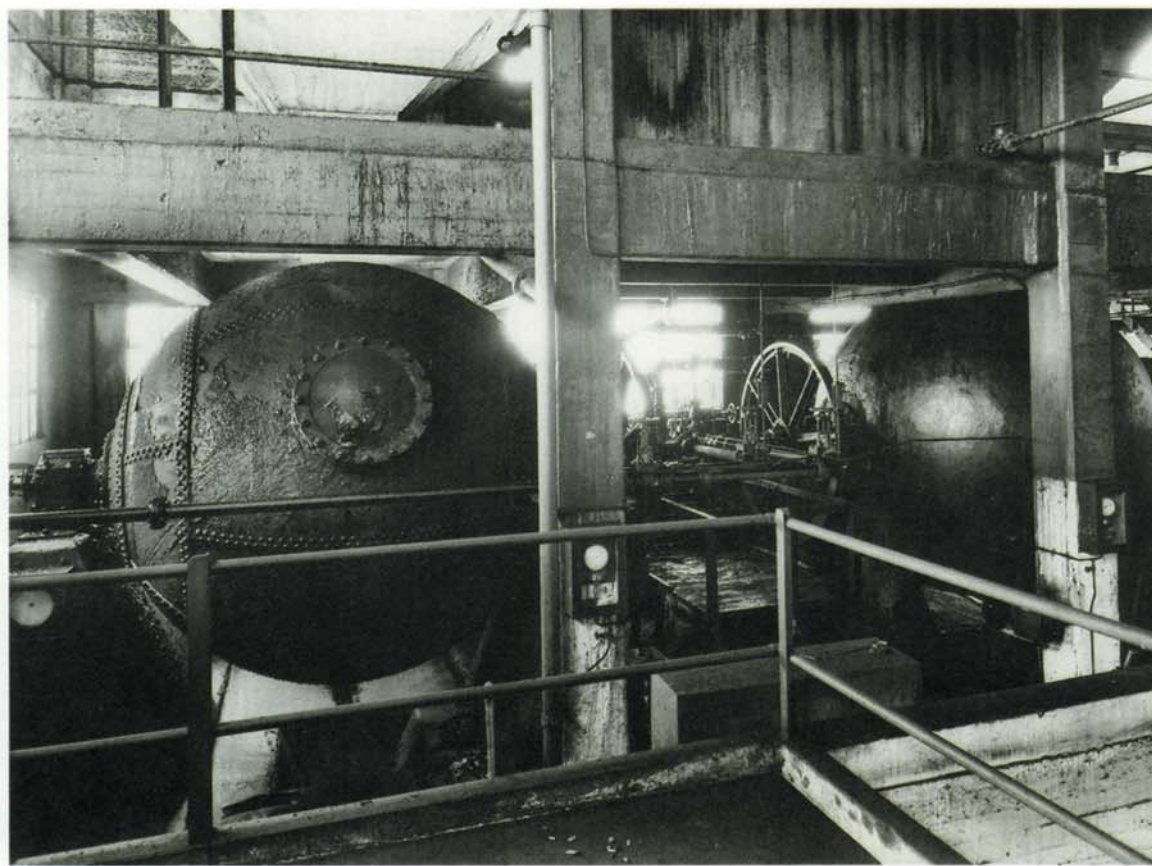
Even with economies, demand for Enstra's products continued to outstrip supply — an echo of the situation in World War I, when shortages of paper had brought about serious dislocations and even bankruptcies. In 1943 the Paper Controller stepped in and introduced a quota system by which S A Pulp's customers were rationed to a fixed proportion of Enstra's output. Users still grumbled about the poor quality of some products — paper thickness was inconsistent, leading to misfeeds on printing machines, and tints on the top surface sometimes differed markedly from those on the bottom — but most knew very well that without Enstra they might have no paper at all.

The new form of paper control meant that S A Pulp was sure to sell all it made. The sales department's role was reduced to placating frustrated customers and helping them to locate extra paper in emergencies. As a result, the sales team moved from Johannesburg to Enstra. Prices were fixed by the Price Controller and were lower than S A Pulp would have liked, but the company was now making steady profits of roughly £100 000 a year. Following a maiden dividend of 6d (5c) paid for 1941 the board had been awarding regular dividends of 9d (7.5c) a year and shareholders could see a return on their investment.

By the later months of 1943 it was clear that the war was approaching a climax and that peace might soon follow. Looking ahead, the paper merchants suggested that some form of paper control should continue even after hostilities ended, to give the trade time to adjust to the new conditions. S A Pulp's management was naturally delighted, the more so as the move was unsolicited; but all realised that the stay might be temporary, and that one day Enstra paper would again have to compete with imports of far better quality. If the company was to survive, it needed expert advice on ways to improve its products and cut its costs.

One source of advice was a new firm of consultants in Britain, the Cellulose Development Corporation or Celdecor for short, formed by Union Corporation on the urging of Umberto Pomilio and Giuseppe Raimondo. Pomilio was still in Italy but Raimondo was living in Britain, having spent nine months in an internment camp on the Isle of Man. Raimondo had teamed up with Denis Pott, the son of a Union Corporation director, to manage Celdecor with the aim of promoting straw pulping throughout the world. S A Pulp's board decided to send Whitmore Richards to see Celdecor in London and find out if Raimondo had any new ideas, and if appropriate to invite him back to Enstra.

In view of this arrangement Celdecor was appointed technical consultant to S A Pulp. Richards set off for Britain in December 1943, but was apparently less than satisfied with what Celdecor had to say. He obtained permission to extend his trip and went on to Canada and



Spherical digesters for pressure-cooking wood chips, as recommended by Umberto Pomilio.

Mill on the veld: Enstra in the 1940s (overleaf).

the United States, where he was put in touch with Oury Hisey, associate professor of pulp and paper at the New York State College of Forestry at the University of Syracuse. Richards and Hisey discussed Enstra's problems, and the American agreed to visit South Africa in the course of his next long vacation, so that he could offer advice on the spot.

Before returning home Richards went to Argentina to visit the Pomilio mill at Rosario, but learnt nothing new. Back in South Africa he passed on a tip of Hisey's, that S A Pulp should consider pulping hardwoods as well as softwoods, even though the fibres were shorter. Hardwood was denser than softwood and load for load produced more pulp, an important consideration when the spherical digesters had a limit of only two tons. As a result the company began buying hardwood wattle from plantations in the Piet Retief district of northern Natal. Wattle had been introduced to South Africa in the nineteenth century for the sake of its bark which was used in tanning.

Oury Hisey arrived in South Africa in July 1944, and a single visit





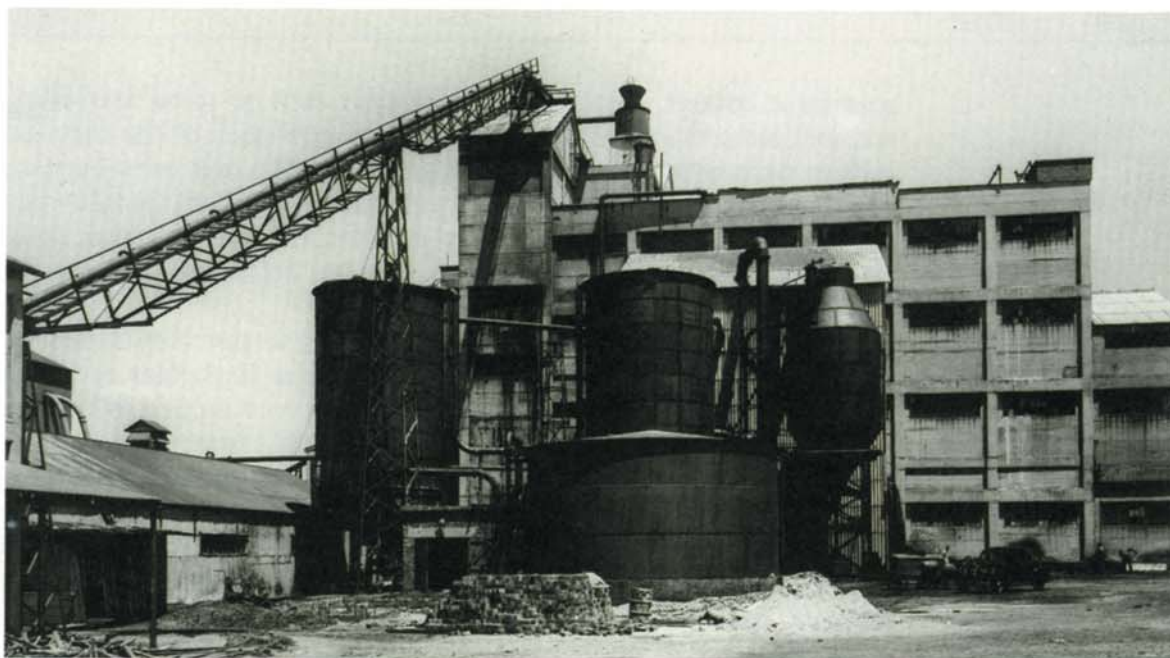
to Enstra convinced him that there was no future in straw. That confirmed the suspicions of many who worked for S A Pulp, among them Whitmore Richards. Hisey was more impressed by the potential of wood. He and Richards made a lightning tour of the tree-growing areas of the Transvaal and Natal, and Hisey noted that in addition to pine and wattle there were large quantities of eucalyptus gum, introduced to South Africa from Australia to produce mining timber. Only recently an Australian mill had begun using eucalyptus to make paper, and Hisey saw no reason why S A Pulp should not follow suit.

During August 1944 Hisey submitted an interim report recommending that the company should start eliminating straw as a raw material and should instead use wood, retaining the soda pulping process. The directors agreed, even though it was known that a Celdecor delegation was about to visit South Africa and would no doubt dismiss Hisey's ideas as nonsense. The conversion would be relatively simple as S A Pulp was already increasing its orders of wood and had just installed two vertical digesters as alternatives to the spherical cookers. The vertical digesters held more pulp and were stationary but otherwise worked on similar principles.

Once wood chips were cooked in the vertical digesters they were ejected into an adjoining blow tank, and there was dismay when this exploded on its first blow. Apparently it was not strong enough. Repairs were made and the new digesters soon began to earn their keep, so much so that a third was ordered and installed. Enstra men referred to the three as Faith, Hope and Charity. In the meantime Oury Hisey had returned to the United States to prepare for the next teaching year, but S A Pulp's board hoped he would agree to return to South Africa during the next North American summer.

Enstra men were intrigued by the new developments, but even the promised switch to wood was not enough to boost morale which had been at a low ebb for some time. Part of the trouble was that many resented being designated as key men, which meant they had been obliged to stay at Enstra throughout the war when they would have preferred to join up. Apart from that, the mill manager was a bad influence, picking fights with all and sundry, and either firing them or making life so unbearable that they resigned. The manager spent much of his time in a local pub together with his favourites, and as gaps appeared in the mill hierarchy these favourites were promoted to fill them.

Matters came to a head when the manager summarily fired Arnold Clark, the superintendent of the pulp plant, who like several of the papermakers had joined Enstra from Gravesend. In protest the pulp plant men walked out and refused to return to work until Clark was reinstated. The manager backed down, but word of the unpleasantness reached Union Corporation where Tommy Stratten and Whit-



Enstra's pulp preparation building fronted by pulp storage chests and the blow tank (right) which exploded on its first blow.

more Richards decided that it was time to intervene. In October 1944 the manager was given an opportunity to resign. Two of his favourites resigned with him, and the three set up a new paper supply house in Pretoria.

To put the mill back on its feet S A Pulp's board appointed a young South African recommended by Tommy Stratten, a graduate chemist named John Henderson, who was new to pulp and paper but had come into contact with Enstra before the war when working in the research laboratories at East Geduld. In fact, in 1938 Henderson had been asked to conduct experiments with Pomilio's pulping processes and had found they did not work, only to be assured that he must have made a mistake. In sending him to Enstra Sappi's chairman, P M Anderson, made it clear that Union Corporation was unhappy with the mill's performance and that it was up to Henderson to improve matters. If he failed, then he too would be out of a job.

The Hisey Touch

EVER SINCE 1936 Union Corporation had treated Enstra like a mine. Working hours were the same, at least for those not on alternating shifts — five full days and a half day on Saturday, ending at 11h30 to allow plenty of time for shopping. The mill's buying was done through the mining house, and stores were classified according to

gold mine listings. Enstra employees were sent on mine firefighting and first aid courses, and in case of emergencies men of the chemical section were issued with breathing apparatus like that worn by mine Proto teams. Enstra families were welcome to join East Geduld mine recreation club — just down the road from the mill — where there were tennis courts, bowling greens, playing fields and a swimming pool.

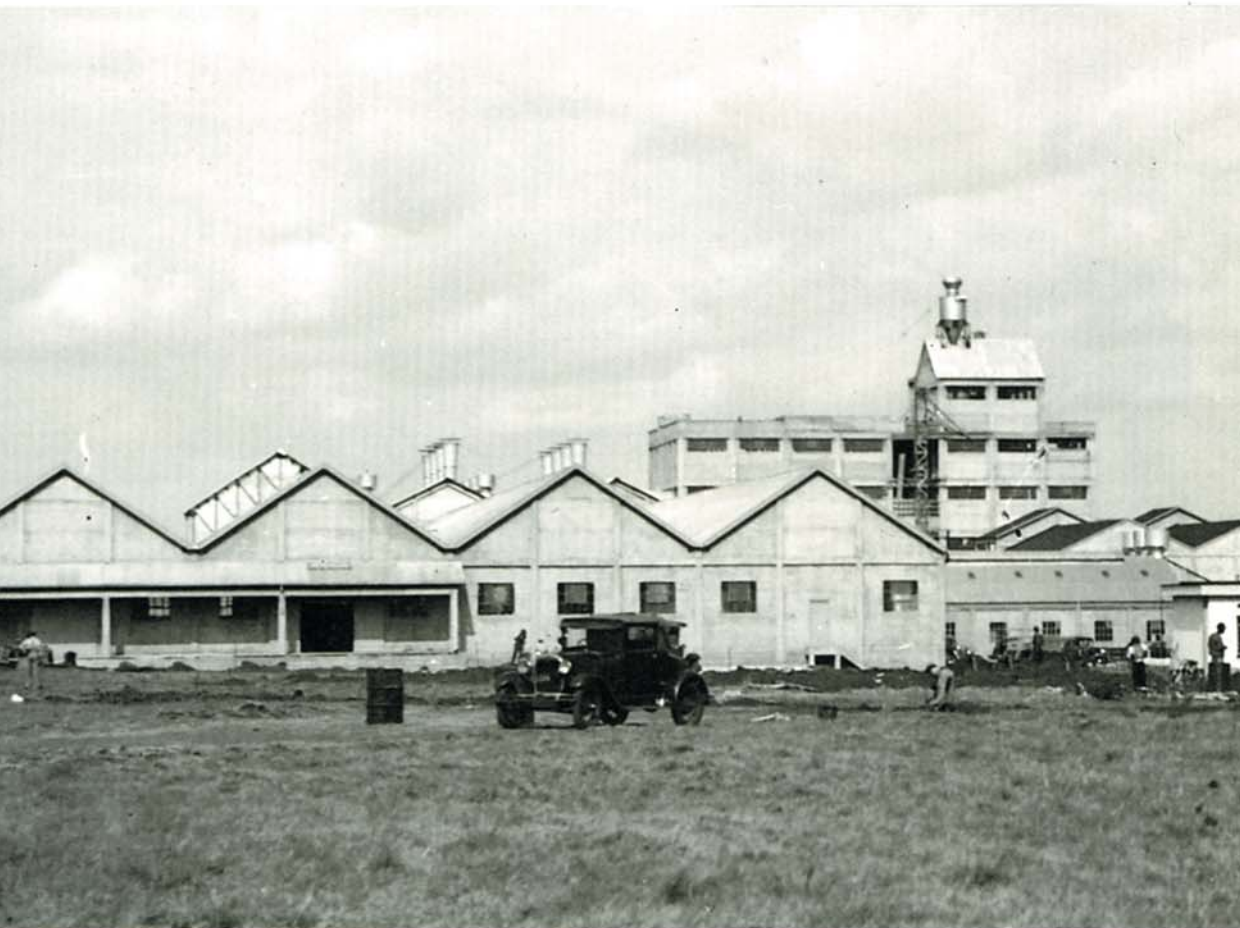
At the start of the war S A Pulp had taken to throwing an annual ball at the recreation club, for many the most important event on Enstra's calendar. At the mill, social life revolved around Whitmore Richards's canteen. Especially on night shift, foremen from the paper, pulp and chemical sections met over bacon and eggs and informally compared notes on their difficulties. Often they were able to sort out problems without having to trouble their superiors — as when a papermaker asked for a subtle change in pulp, or a pulp man asked for special service from the chemical operators.

Tucked away in one corner of the mill was an all-female department, the sorting house. Several of the sorters had husbands or fathers at the mill. Their chief task was to count sheets of paper ready for packing and despatch and at the same time to check for flaws. Women were much more adept at this job than men as their fingers were more nimble, fluffing the paper and fanning out the sheets and running their fingers down the edges. Each sorter wore a rubber thimble and used an L-shaped sorting frame to square up edges ready for guillotining. Once paper was counted it was put on a trolley and wheeled away.

More women worked in the mill administration block, where secretaries, clerks and typists outnumbered the male staff. One of the secretaries, Ellen Masséy, was engaged to Dennis Masson of the accounts department, who had returned to Enstra after several years in prisoner-of-war camps following capture at Tobruk. Soon the couple married, and it seemed that the whole of Enstra was at the wedding. Everyone wanted to kiss the bride. To bring Enstra's womenfolk closer together John Henderson's wife Mary organised a vegetable club whose members pooled their money and received baskets of fruit and vegetables bought direct from Springs market.

Henderson himself had a man-sized job on his hands as he tried to restore Enstra's fortunes. It seemed to some that he never left the mill, forever dropping in on the various sections to encourage those at work and obviously wanting to lead by example. As a chemist himself, he was particularly keen to build up Enstra's chemical strength. Under his predecessor, chemists had been neglected, as the





accent had been on papermaking and its reliance on look, feel and taste. Several Enstra chemists had resigned in disgust, and in their place the manager had appointed a single chemical engineer who he thought might have practical solutions to the mill's problems.

The man appointed seemed all the more impressive when it was realised that he had a doctorate. Chemical engineers of any kind were rare, so for the company to find one with such high qualifications was something special. At first the chemists still on Enstra's staff regarded the newcomer with awe, but then he made several elementary mistakes and it gradually dawned on them that he was a phoney. Even then it was some time before the manager dismissed him. It later emerged that the closest the man had come to chemical engineering had been a job selling heavy chemicals in Europe, before the war.

The memory of that episode had still been fresh when Henderson arrived, and to counteract it he brought back Leonard Job, a gifted young chemist with an MSc degree who had worked at Enstra during



The profile of Enstra, with the finishing house on the left, administration block on the right and the pulp plant in the background.

the start-up period. The two had become friends during Henderson's stay at East Geduld. In 1943 Job had left Enstra and had since worked under Tommy Stratten in war supplies, but now Henderson needed his help in deciding where S A Pulp was going. Job's personal view was that at least in the short term, the company should concentrate all its efforts on making paper, if necessary importing pulp from the northern hemisphere.

Before Job had time to press the point, Oury Hisey resigned his teaching post in Syracuse and returned to South Africa to take up a full-time appointment with S A Pulp. Celdecor viewed this move with suspicion and late in 1945 Giuseppe Raimondo arrived back at Enstra, instructed by his partners to make sure that S A Pulp continued processing straw, for otherwise Celdecor would be discredited. All too soon Raimondo realised it was a lost cause. Straw supplies from the Transvaal and Orange Free State had dwindled to a trickle, not least because government officials were urging farmers to plough



straw into their land as compost.

Early in 1946 Hisey and Raimondo teamed up to look into Enstra's problems and wrote a joint report recommending that the company should take immediate steps to make the plant independent of straw by increasing its capacity for pulping wood. To save money, sections of the straw plant could be utilised for pulping as an interim measure; but they pointed out that it was essential to bring in a full-scale chemical recovery plant, both to save having to install extra plant for making caustic soda and chlorine and to cut down on effluent, which would otherwise be a major headache.

In spite of his Celdecor connection, Raimondo agreed with Hisey that S A Pulp should link up with a technical partner or partners already experienced in soda pulping and prepared to advise on what should be done. Hisey recommended a Canadian company, Howard Smith Paper Mills of Montreal, which had a number of mills in Canada and the United States and is today part of Canada's Domtar group. S A Pulp contacted Howard Smith and was told that although the Canadians were interested, they had no one they could send to South Africa; but that if S A Pulp cared to send men to Montreal, they would be very welcome.

In August 1946, John Henderson and Harold Rogers of Tommy Stratten's department at Union Corporation set off for Montreal, expecting to be away for months as they were travelling by sea. In Henderson's absence Hisey took over as manager at Enstra. On arrival in Montreal Henderson and Rogers were met by George Tomlinson, Howard Smith's technical director, who arranged for them to visit a series of mills, some specialising in fine papers, some in kraft and some in newsprint. Henderson took special interest in the soda recovery processes used by Howard Smith, one of them a furnace only recently invented by Tomlinson himself.

The South Africans had been away for two months when they were joined by Tommy Stratten, who reached Montreal more rapidly by flying. Stratten wanted to tie up an agreement for technical co-operation, so invited the Howard Smith men to lunch and as a special treat showed films of South African wildlife, borrowed from the South African High Commission in Ottawa. The Howard Smith men were delighted, and made it clear that they would be pleased to help as many men as S A Pulp cared to send, and hoped to send their own representatives to South Africa as soon as circumstances allowed.

At Enstra, Hisey was becoming a popular figure even though some found it difficult to follow his 'Yankee accent.' He was a man in his fifties so was a good deal older than all but a few of Enstra's staff, but

One of the Holland beaters in which pulp was prepared ready for making paper.

had no difficulty in finding his feet. People talked about him as 'The Prof,' and as if to justify his nickname he offered a course of evening lectures on pulp and paper at the East Geduld club. The lectures were first-rate and well attended, and Enstra men took the point that their work was a subtle blend of art and science — a startling conclusion, considering the difficulties they met from day to day.

Not long after Henderson's return to Enstra, two more men left for Montreal. This time it was the turn of Arnold Clark of the pulp plant and 'Old' Harry Smith — there was a 'Young' Harry too — who was chief papermaker. Their brief was to learn anything and everything they could, and once again the Howard Smith men proved wonderful hosts. By now it was 1947 and Hisey had persuaded Union Corporation that Enstra's existing soda recovery system, a makeshift affair put together at the end of the war, was no longer adequate. He recommended the system built around the Tomlinson furnace from Canada; but Celdecor wanted to order a British design, the Wagner furnace.

The stage was set for a showdown between Hisey and Celdecor. Both lobbied Union Corporation, and Hisey was able to demonstrate that though the Wagner furnace was cheaper, its soapstone lining quickly corroded and had to be replaced every six months. In contrast, the Tomlinson system was water-cooled and there was no corrosion. Hisey won the day and Union Corporation ordered the Tomlinson furnace. Celdecor's appointment as S A Pulp's technical consultants was cancelled. Raimondo left Celdecor to start his own business, Celdecor itself broke up soon afterwards, and Hisey was left in undisputed control.

Chemistry

ENSTRA'S LAST STRAW was harvested in December 1947, and S A Pulp took steps to sell off the fleet of tractors and balers loaned to farmers. Steadily the mill's straw park emptied until the final pulping was completed in April 1948. The straw preparation plant was converted into a store, but the straw chlorination towers were adapted for pulping wood. Already the company had stepped up orders for pine railed from the Eastern Transvaal and wattle from Natal, and eucalyptus was trucked in from private plantations not far from Johannesburg. A new era was beginning, and nobody regretted the passing of the old.

To mark the transition S A Pulp published an illustrated brochure which made no reference to its beginnings but instead stated baldly: 'Paper from Wood: that is the background of South African Pulp and Paper Industries Ltd.' According to the brochure, the company now



*Wood for paper: a eucalyptus plantation
near Johannesburg.*

employed 350 whites and 700 blacks and coloureds, who together produced 1 350 tons of paper each month as well as 200 tons of cardboard and quantities of chemicals — hydrochloric acid (made by burning hydrogen in an atmosphere of chlorine), chloride of lime (a combination of lime and chlorine gas), liquid chlorine (made by compressing and cooling chlorine gas) and the caustic soda used in the pulping process.

Enstra's caustic soda was used in the pulp plant, though there would be a surplus for sale once the soda recovery plant started up. The other chemicals were marketed as by-products, and S A Pulp was regarded as one of South Africa's leading producers. During the war years the largest of these producers, African Explosives and Chemical Industries or AECI for short, had proposed to Union Corporation that Enstra's chemical section should be separated from the rest of the mill and run as an independent company which AECI would manage. Nothing had come of the idea, but AECI's interest had confirmed Enstra's importance.

One page of the brochure was devoted to Enstra's 'control and research laboratory,' actually two areas as there was now a quality



control laboratory inside the paper machine house. This freed the original laboratory to concentrate on research. The laboratory team included eight chemists all reporting to Leonard Job, who had been appointed Enstra's assistant manager. Some members of the team worked on plant problems such as effluent control and bleaching techniques. Others carried out routine tests on paper, checking for tensile strength, weight, resistance to tear, ability to fold and other attributes whose absence had been criticised in the past.

Plainly Enstra's chemists were coming into their own. They had always had influence in the pulp and chemical sections, but paper-makers viewed them with suspicion. In response, John Henderson arranged for several young chemists to join the papermaking crews, which taught the chemists new skills and showed the papermakers that scientists were not an alien species. On Oury Hisey's request chemists began investigating the pulping characteristics of the various types of wood used at Enstra, and miniature pilot plants were built to test techniques. As a result of these tests Hisey suggested that Enstra should modify the soda cooking process by adding a touch of sulphur.¹

By itself, the soda process was a matter of adding caustic soda to wood chips and then pressure-cooking the mixture with steam. This worked rather too well in that the soda was aggressive and the cellulose was weakened. By adding sulphur, the process was slowed down and produced much stronger pulp, though it also produced a sulphurous odour which brought complaints until it was contained. Gradually the new plant was erected and with it new digesters to increase the mill's pulping capacity, and in March 1949 two of Enstra's chemical men set off for Montreal to learn more about how the plant should be operated.

One of the two was Leonard Job and the other was Chris Myburgh, a chemical engineer who had joined Enstra in 1940 when fresh from university. Now he was superintendent of the chemical section. As usual the Howard Smith company gave the South Africans a warm reception and showed them everything they wanted to see, not only the recovery plant but also innovations like the Hooker electrolytic cell which worked much better than Pomilio's. In addition, Myburgh travelled to New Mexico to examine a carbate plant for making hydrochloric acid, much more compact and straightforward than the existing acid plant in use at Enstra.

Back in South Africa, Job and Myburgh took turn and turn about in twelve-hour shifts to teach Enstra crews how to operate the recovery plant. Myburgh advised S A Pulp's management to introduce Hooker cells and buy a carbate acid plant, and both ideas were ap-

proved. The acid plant was a priority as the old one was dangerous and liable to explode if the chlorine and hydrogen gases fed into it suddenly surged and came into contact with the flame used to ignite the hydrogen. The new plant was installed but the water seal pipe at the bottom was too short. Enstra chemists combed the district for Ford radiator hoses which had the same diameter and joined them up to make a loop, which worked perfectly.

Shortly before the new plant was commissioned, late one evening there was a sudden surge of the gases in the old plant. An explosion followed, and a gasometer used to store hydrogen took off like a rocket with a trail of flames behind it. The gasometer — an inverted cup with a diameter of ten metres — soared about 50 metres in the air, turned through 180 degrees and landed on a pile of empty drums. Not long afterwards the same thing happened with the second gasometer, this time in daylight. Neither episode caused any casualties, and the gasometers were not missed as the old plant was being scrapped.

The new plant started up during 1949, at a time when S A Pulp's management was thinking about major expansions likely to double and eventually quadruple the company's output. Some of the plans affected Enstra, but others concerned a quite different venture, a new mill to be built in Natal which was to specialise in kraft packaging papers. Union Corporation had been considering the Natal scheme ever since the war years, partly to discourage other investors from launching mills of their own. The wartime paper shortage had led at least two other mining houses to undertake feasibility studies.

Nothing much had been done about the plan until Oury Hisey joined S A Pulp and toured South Africa to look for possible sites. His trip took him from Saldanha Bay north of Cape Town to the Limpopo River which divides South Africa from Zimbabwe, but all the most promising sites were in Natal. In May 1947 he, John Henderson and Percy Anderson — P M's brother — of Union Corporation's survey department travelled to Durban to make a closer inspection. On arrival they tried to hire a car but found none was available, so telephoned Johannesburg for help and had to wait for three days until a car was sent to them by rail.

The three men visited all the sites picked out by Hisey, each time checking for plenty of water, adequate timber, enough labour, on-the-spot rail links and a means of disposing of effluent. At one point they drove all the way to Richards Bay in Zululand, a beautiful though desolate spot named after one of Whitmore Richards's ancestors; but there was no rail access, and it was ruled out. They also looked at Mtubatuba not far from Richards Bay, today an important forestry centre, and they visited several municipal sites close to Durban, among them the one now occupied by Mondi Paper's



Laboratory staff photographed in 1945, among them Piet Fourie (back row, third from left), Henry Myburgh (back row, far right), Toppie van Jaarsveld (front row, second from left) and Louis van der Walt (front row, second from right).

The Tomlinson soda recovery plant installed on Oury Hisey's advice (overleaf).

Merebank mill. For one reason or another all were rejected.

The travellers were more impressed by a site near Stanger on the Natal North Coast, though they were doubtful about its water supply; but even that was eclipsed by what they found on rolling farmland overlooking the Tugela River on Zululand's southern boundary, close to the bridges carrying the road and rail line which gave Zululand its only links with the south. The site met all five of Oury Hisey's criteria and Percy Anderson took options on two farms though without revealing whom he represented. Soon afterwards the options were taken up — not by S A Pulp but by Union Corporation, as there were suggestions that the second mill should be launched as a quite separate company.

That was not the view of Tommy Stratten, who was now a director of S A Pulp as were Whitmore Richards and Oury Hisey.² Stratten was also the mining house's chief consulting engineer, so took a double interest in the paper company's progress. He was convinced





that the second mill would work best if tied to S A Pulp, particularly if it made a different style of paper. Oury Hisey was sure that Natal wood could be made into high-quality kraft paper even though many supposed that South African fibre matured too rapidly to be strong enough — between twice and six times as fast as its counterparts in the northern hemisphere.

Nothing had been decided, but in June 1950 John Henderson learnt that a British company was trying to sell a brand new 170-inch (4,32m) paper machine for a bargain price. The machine was considerably larger than those at Enstra and had been custom-built for a paper company in India, but following that country's partition would have ended up on the Pakistan side of the border and was no longer

Pulp in storage at Enstra, retained until needed for making paper.



wanted. The makers, Walmsleys of Bury, were ready to sell the machine to S A Pulp and to send out its components in six fortnightly sailings. The opportunity was too good to miss, particularly as the machine had been designed to make both kraft and newsprint.

The order was placed and the machine was despatched. A storehouse was hastily constructed on the site earmarked for the Tugela mill, though as yet no mill had been designed. It was a ridiculous situation, but the machine's arrival acted as a catalyst. Union Corporation agreed that the mill should be built and ceded the two farms to S A Pulp, while Oury Hisey worked directly with the mining house's engineering department in drawing up plans. The new mill was to specialise in unbleached kraft and the Walmsleys machine was expected to produce 100 tons of paper per day — twice the output of the two machines at Enstra.

To start with, the new mill was to pulp wood bought from private growers in Zululand and elsewhere in Natal, but Hisey said that it was high time the company began growing trees of its own, ready for the future. For that the company needed land, and S A Pulp representatives inspected several properties in southern Natal. On their recommendation the company bought a single farm in the Ixopo district, bare of trees but close to a narrow-gauge rail line linked with the main line system. More farms followed, and S A Pulp men began looking forward to the time when their company could make paper from trees it had grown from seed.

Doubling Up

SOON AFTER THE war S A Pulp's sales department had returned to Johannesburg and now had offices in the Union Corporation building, where Whitmore Richards kept an eye on it. Paper control had been lifted in 1946 but price control was still in force and imported papers were far more expensive than their Enstra equivalents. This meant that S A Pulp still sold all the paper it produced, and the sales department still had to ration deliveries to ensure that customers received their fair share. Profits were encouraging and shareholders, not least Union Corporation, were reaping rich rewards — so much so that S A Pulp's management felt it was time to expand.

One possibility was to begin converting paper to make consumer products. Extra paper was already used to make envelopes, but supply houses would not be impressed if S A Pulp went into opposition. There was greater potential in the packaging sector, still in its infancy and consisting in the main of small companies specialising in making boxes, bags, corrugated containers and paper sacks. The corrugating industry in particular was still young, and John Henderson

believed there was scope for an extra factory which could eventually serve as a showcase for packaging papers made in Zululand.

During a visit to Britain in 1947 Henderson had met a representative of a leading British corrugating converter, Thompson & Norris. The representative told Henderson that his company was installing new equipment at one of its British factories and was scrapping the old plant to make sure competitors could not get hold of it. Henderson suggested that the old plant should be shipped to South Africa and set up at Enstra where there was plenty of room to build a factory alongside the mill, meaning that the two operations could pool their resources. Thompson & Norris liked the idea and in September 1947 sent two directors to South Africa to investigate.

Henderson's idea looked viable, and it was agreed that Thompson & Norris and S A Pulp should join forces in creating a new company, Union Corrugated Cases, with the British firm holding a controlling interest. S A Pulp agreed to build the new factory though in the event there were delays because of shortages of cement. The corrugating and boxmaking machinery arrived, together with a team to operate it, and in February 1949 Union Corrugated Cases — UCC for short — went into operation. Water, steam and electricity were provided by the mill, and UCC shared Enstra's stores, workshops and canteen.

UCC's raw materials were kraft linerboard (the stiff paper that forms the inside and outside of corrugated board) and fluting (the corrugated paper inside the sandwich). Both linerboard and fluting were imported in reels. As Henderson had hoped, UCC soon found customers, and the success encouraged S A Pulp's board to think of introducing extra pulp and paper capacity at the mill. The market was crying out for more paper, wood pulping could be stepped up, and Enstra's reservoir could provide twice as much water as the existing operations consumed. Already Oury Hisey was drawing up plans for a third paper machine and extra pulp and chemical capacity to support it.

By coincidence, it was learnt that the Wiggins Teape company of Britain wanted to erect a paper machine somewhere in South Africa to make speciality products like cheque paper. Wiggins Teape was one of the great paper companies of the world and already controlled a supply house in South Africa. Its representatives approached S A Pulp with the suggestion that the machine should be set up at Enstra and run by papermakers sent from Britain. In addition, Wiggins Teape wanted to invest in S A Pulp and offered to enter into a technical partnership aimed at improving Enstra's output.

The machine offered by Wiggins Teape was old and small — only 72 inches (1,83m) wide, compared with the 104 inches (2,64m) of the two from Edinburgh — but it was capable of making superior paper

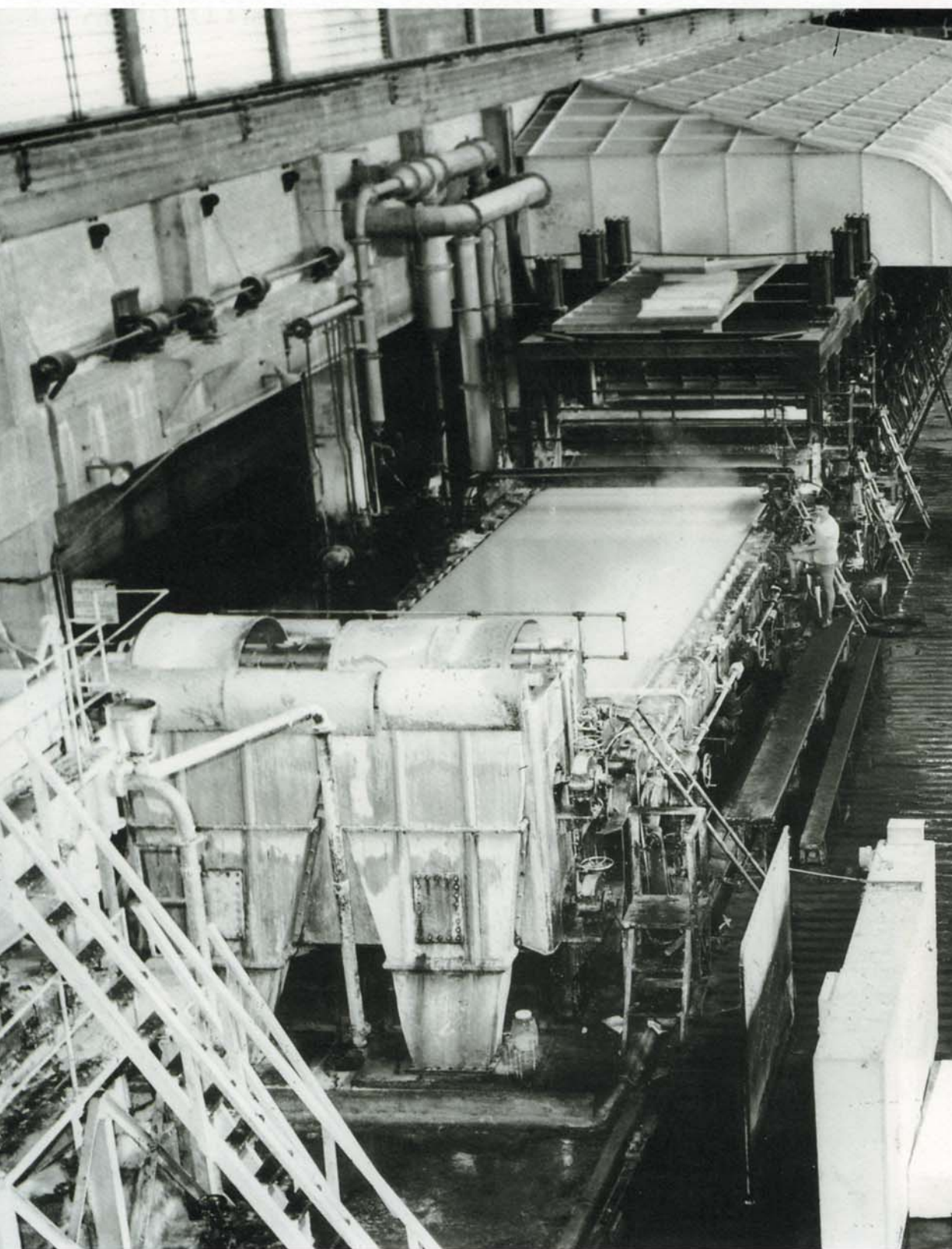
from rags, the best raw material. S A Pulp's management duly negotiated a technical agreement with the British company and arranged for the machine to be shipped out. At the same time the board approved Hisey's plan for a 120-inch (3,05m) 'No 3' Fourdrinier machine able to make 40 tons of paper per day, and this was ordered from Walmsleys of Bury.

The new machines were to be housed on a site occupied by Enstra's finishing house, which had to be moved. Other sections of the mill had to be extended or modified, and it was expected that construction would take more than two years. To pay for the expansion S A Pulp first resorted to shareholders. In September 1949 the company's capital had been raised to £1 million, with new shares

Making paper on Enstra's No 3 (left) and No 4 machines (overleaf).

Extending Enstra's machine house to make space for new paper machines.





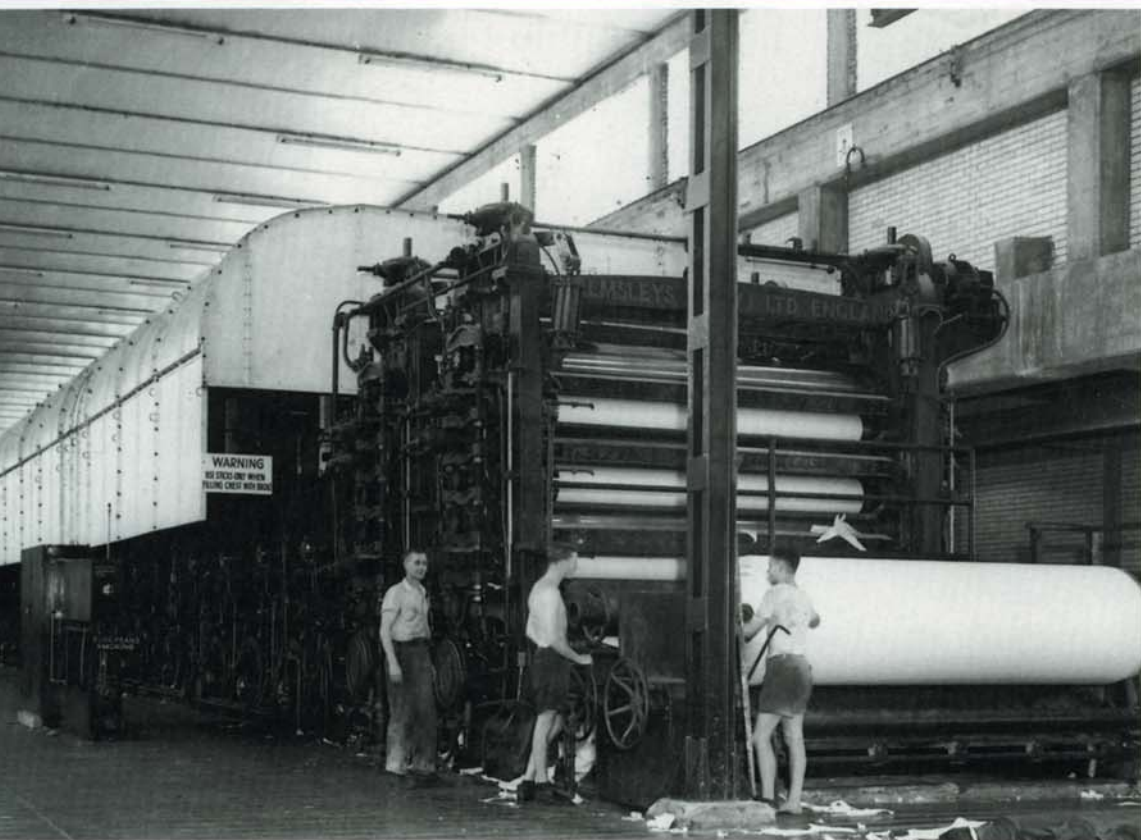


taken up by Wiggins Teape and the Howard Smith company. The board was enlarged to make room for two Wiggins Teape representatives and one director nominated by Howard Smith, raising the membership to nine.

By November 1950 the company was committed to the Tugela project so needed yet more funding. Shareholders were asked to increase S A Pulp's authorised capital to £1,75 million, and new shares were taken up by Union Corporation, Howard Smith and other minority holders including the Industrial Development Corporation, a parastatal investment agency pledged to encourage industrial growth. Because the shares were sold for 40s (R4) each, the issue netted £2 million, but even that was not enough. S A Pulp's board arranged to borrow a further £1 million from an insurance company and as collateral offered Enstra, the farms on the Tugela and indeed all the movable and immovable property that the company possessed.

With so much going on, in May 1951 John Henderson was appointed S A Pulp's general manager and moved to Union Corporation's

Johnny Peden (left) beside the dry end of Enstra's No 3 machine, commissioned in 1952.



offices in Marshall Street, Johannesburg, taking with him a marketing man and a typist as the nucleus of S A Pulp's first head office. The team had quarters on the eighth floor but lifts stopped at the seventh, so it was a modest start. Leonard Job became manager at Enstra, where construction was in full swing and the little Wiggins Teape machine had been assembled. Trial runs began in August 1951 and the papermakers sent to operate the machine looked for suitable rags but found there was a shortage. Most of those offered were made of synthetic materials, so were useless for making paper.

An interesting feature of the 'No 4' machine was its dandy roll, a wire mesh cylinder at the termination of the wet end which carried scores of dies or electros, the stamps used to impress watermarks. Each set of electros had a special design, and the translucent watermarks were fixed into the paper as it sped towards the dry end. Unfortunately orders for No 4's special paper were slow and small, and the papermakers found their rag paper was uneconomic. In time they were recalled to Britain and S A Pulp teams took over, using ordinary pulp and in the first instance making blotting paper. An Enstra foreman was so embarrassed to see the date 1882 on a section of the machine that he told his men to file it off.

Once the major expansion was under way, Oury Hisey decided that there was little more that he could contribute so retired, intending to charter a yacht and cruise the Mediterranean. 'The Prof' had become an Enstra institution and would be sorely missed, for to him belonged much of the credit for diverting S A Pulp from what could have been a suicidal course. Already sections of his No 3 machine were arriving at Enstra. The machine incorporated all the latest technology, not least rope feeding, a system that saved papermakers from having to feed paper by hand. In future, they would stand a better chance of retaining their fingertips.

As had happened with the UCC factory, construction was hampered by shortages of cement. Often S A Pulp trucks were sent all the way to the Western Transvaal to collect emergency loads. A new finishing house was completed, a new electrolytic plant was built to house Chris Myburgh's Hooker cells, and other new plants included a pulp washing section, bleaching liquor equipment and an alum and size section. The No 3 machine made its first paper on October 9 1952, not bleached paper but unbleached kraft made from recycled waste and imported pulp — a foretaste of the paper that would be made at the new mill in Zululand.

Another taste of things to come was an experiment with newsprint, which consisted chiefly of mechanical pulp obtained by shredding logs on a grindstone rather than by cooking chips. Mechanical pulp retained wood's lignin so was liable to turn yellow in the course of time, but a much greater volume of the original wood was retained.

Union Corporation wanted to learn more about the process so had provided a pilot grinding unit. Experiments continued for a year, and in February 1952 the resulting pulp was made into newsprint and was tried out on a press at the Johannesburg *Star*. Sceptics who had predicted that quick-growing local trees were not up to the job were pleasantly surprised.

Changing reels without interrupting the running of the machine: Enstra's No 3 in 1953.

Inside the pulp plant: vacuum filters used for removing black liquor and washing the pulp.

