

# A taste of adventure

KERALA, INDIA, AND THE MOLUCCA ISLANDS, INDONESIA

The history of spices is the history of trade



SOON after dawn on May 21st 1498, Vasco da Gama and his crew arrived at Calicut after the first direct sea voyage from Europe to Asia. If history's modern age has a beginning, this is it. Europe's ignorance of, and isolation from, the cosmopolitan intellectual and commercial life of Asia were ended forever. With ships, weaponry and a willingness to use them both, the countries of Europe were about to colonise the rest of the world. To support this expansion, its merchant classes would invent new forms of commercial credit and the first great corporations, vital parts of capitalism's operating system, and spread their trading networks across the seven seas. And what did the men shout as they came ashore? "For Christ and spices!"

The proselytising part turned out to be disappointingly unnecessary: there were already plenty of Christians living on the Malabar coast, following the arrival of a Syrian contingent many centuries earlier. But as far as spice went, Da Gama and his crew were right on the money. Then, as now, Calicut was a gateway to the world's greatest pepper-growing region—indeed this was why the Syrians had moved there in the first place. As such it was at the heart of the spice trade, a network of sea routes and entrepôts in the making for millennia: the world economy's oldest, deepest, most aromatic roots.

For thousands of years before Da Gama and hundreds of years afterwards, the secret of the spice trade was simple: great demand and highly controlled supply. Some of that control was enforced through political power or contrived through mercantile guile. Some was simply a gift from the gods of climate and botany. Legend has it that, before leaving, Da Gama dared to ask the zamorin of Calicut whether he could take a pepper stalk with him for replanting. His courtiers were outraged, but the potentate stayed calm. "You can take our pepper, but you will never be able to take our rains." He knew how important the region's unusual twin monsoon, both phases of which bring heavy rain, was to its fickle crop. To this day, though regions elsewhere grow pepper, Kerala reigns supreme in its quality, dominating the high end of the market.

If those vital downpours have not washed away what passes for the road, a few days travel into Kerala's rolling

Western Ghats, where waterfalls roar and herds of wild elephants loom from soft mist, brings you to the ancestral home of *Piper nigrum*. High up in the middle of nowhere, Iddicki produces the finest pepper in the world, its peppercorns always dark and heavy, bursting with flavour. Its vines wind their way around almost every tree in sight, climbing ten metres or more into the sky.

After such a journey you might expect Iddicki to be a sleepy backwater. In its own idyllic way, though, it is a boomtown worthy of the Wild West. Fancy jeeps clog the narrow streets; shops overflow with the latest necessities of rural life, like washing machines and stereos. Giant satellite dishes shove their expensive snouts at the heavens from every other house. One of the world's largest stashes of gold is in rural India, and to judge by its glittering jewellery shops this town has considerably more than its fair share. "Black gold," explains one pepper farmer with a broad grin, is fetching top prices on the world market.

Until you talk to them about that world market, Iddicki's residents seem much like farmers anywhere else in the developing world—scraping a living at the margins of the market economy. Thomas Thomas, one of the several hundred thousand smallholders who grow Kerala's pepper, is a good example. A humble man of the earth, he speaks softly and still wears his *dhoti*, a traditional loincloth, when he tills his soil. But with a little prompting he will give you an analysis of the pepper market sophisticated enough to make a Chicago commodities trader blush: current prices, the direction of the futures market, the costs versus benefits of holding stocks. A local spice dealer explains over a feast of fiery snapper and spiced tapioca at his spacious bungalow that "there is full price-discovery in this market." The farmers who sell their crops to him (for resale at the big market in Jewtown, which has replaced Calicut as the hub of Kerala's pepper trade) do so with the latest New York and Rotterdam prices in hand. One particularly sharp farmer, he moans, is cutting out the middlemen altogether and shipping his stocks directly to Europe.

The global aspect of the dealer's trade is nothing new. As far back as 2600 BC, there are records of the Egyptians feeding spices obtained from Asia to labourers building the great pyramid of Cheops, to give them strength. Ar-

**And what did the men shout as they came ashore?  
"For Christ and spices!"**

cheological evidence suggests that cloves were quite popular in Syria not long after, despite the fact that, like nutmeg and mace, they came only from the spice islands of what is now Indonesia. Long before the 6th century BC, when Confucius advocated the use of ginger, the Chinese were obtaining spices from the tropics. Europe imported them before Rome was founded.

Today spices are chiefly flavourings for food, but a hundred other uses have contributed to the demand through history. In ancient Egypt cassia and cinnamon fetched a high price because they were essential for embalming; so too were anise, marjoram and cumin, used to rinse out the innards of the worthy dead. Hammurabi's legal code, which called for severe punishment of sloppy or unsuccessful surgeons, did much to encourage the use of medicinal spices in Sumeria.

Particularly in Europe, though, food came to matter most. Spices preserve, and they also make the poorly preserved palatable, masking the appetite-killing stench of decay. After bad harvests and in cold winters the only thing that kept starvation at bay was heavily salted meat—with pepper. And there was never enough of it. Thus pepper began the association with gold it still has in the streets of Iddicki, often at a one-to-one exchange rate. In order to call off their siege of Rome in 408AD, the Visigoths demanded a bounty in gold, silver and pepper. In the Middle Ages plague added to the demand for medicinal spices; a German price table from the 14th century sets the value of a pound of nutmeg at seven fat oxen. At the same time "peppercorn rents" were a serious way of doing business. When the *Mary Rose*, an English ship that sank in 1545, was raised from the ocean floor in the 1980s, nearly every sailor was found with a bunch of peppercorns on his person—the most portable store of value available.

The great beneficiaries of Europe's need were the Arabs. Spices could change hands a dozen times between their source and Europe, soaring in value with each transaction, and the Arabs were the greatest of the middlemen. Keen to keep it that way, they did everything possible to confuse consumers about the spices' origins. As early as the 5th century BC an Arab cover story fooled Herodotus into believing that cinnamon was found only on a mountain range somewhere in Arabia. The spices were jealously guarded by vicious birds of prey, he wrote, which made their nests of the stuff on steep mountain slopes. Arabs would leave out large chunks of fresh donkey meat for the birds to take back to their nests, which would crash to the ground under the weight. The brave Arabs then grabbed the nests, from under the talons of their previous owners.



ot everyone was fooled. In the 1st century AD the Roman historian Pliny grew concerned at the way the empire's gold flowed ever to the east, and set out to expose the truth and undercut the Arab monopolists, who he reckoned to be selling pepper at prices a hundred

times what they paid for it in India. It did not help that the gluttonous Romans were, in the words of Frederic Rosengarten, a spice historian, "the most extravagant users of aromatics in history". They used spices in every imaginable combination for their foods, wines and fragrances. Legionaries headed off to battle wearing perfume. The rich slept on pillows of saffron in the belief that it would cure hangovers.

Resentment against the Arab stranglehold had led Rome to launch an invasion of Arabia in 24BC, an ill-fated expedition that ended in humiliation. But where military means failed, market intelligence prevailed. In 40AD, Hippalus, a Greek merchant, discovered something the Arabs had long tried to obscure: that the monsoons which nourish India's pepper vines reverse direction mid-year, and that trips from Egypt's Red Sea coast to India and back could thus be shorter and safer than the empire had imagined. Roman trade with India boomed: the Arab monopoly broke.

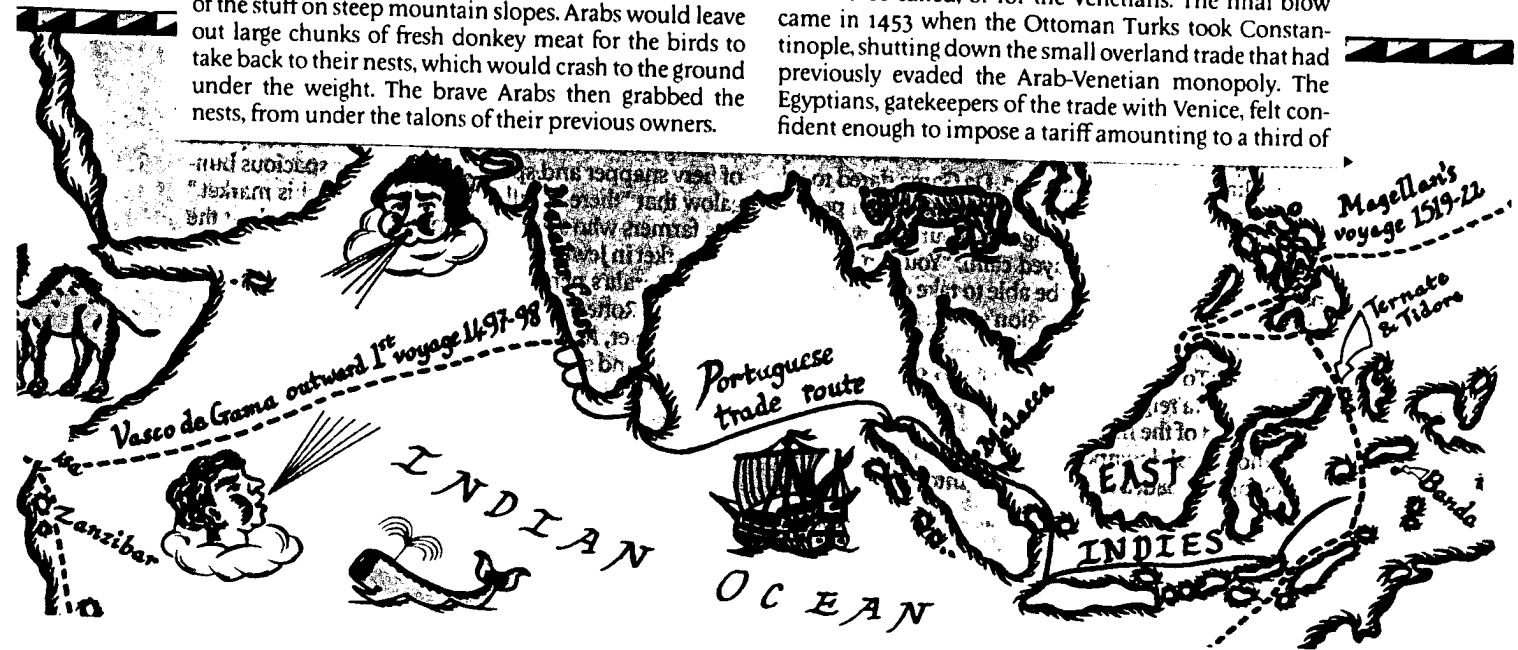


Cinnamon

Early in the 7th century, an obscure spice merchant named Muhammad re-established Arab dominance of the spice trade by introducing an aggressive, expansionary Islam to the world. When the muslims took Alexandria in 641AD, they killed the trade which had long flourished between Rome and India. As they tightened their grip on the business over the next few centuries, prices in Europe rose dramatically. During the Middle Ages, spices became a luxury that only a few in Europe could afford. This was bad news for the poor and good news for Venice. Its

shrewd merchants struck a deal with the Arabs that made them the trade's preferred—indeed almost exclusive—European distributors. Even during the crusades, the relationship bought wealth to all concerned.

The rest of Europe did not care at all for the Muslim Curtain, as the Islamic empire separating west from east came to be called, or for the Venetians. The final blow came in 1453 when the Ottoman Turks took Constantinople, shutting down the small overland trade that had previously evaded the Arab-Venetian monopoly. The Egyptians, gatekeepers of the trade with Venice, felt confident enough to impose a tariff amounting to a third of



the value of spices passing through their fingers.

Salvation for the palates and exchequers of Europe's kings lay in finding a sea route to the Indies. In particular, the hunt was on for Malacca, the most important entrepôt in the spice trade and the fabled gateway to the Spice Islands. Spain and Portugal financed dozens of exploration parties in its general direction; half would never make it back home. The rationale for this expense and danger was simple: "He who is lord of Malacca has his hand on the throat of Venice."

**"He who is lord of Malacca has his hand on the throat of Venice"**

It was as part of Portugal's *Drang nach Osten* that Vasco da Gama rounded Africa's Cape of Good Hope to reach India in 1498. As waves of Portuguese explorers returned to Lisbon with their loads of spices, the Venetians and the Egyptians were stunned: the price of pepper in Lisbon fell to one-fifth that in Venice.

The Spaniards, too, were less than happy. They had sent Christopher Columbus to find a route to the Indies via the west, but he had failed, hitting upon the previously unknown Americas instead. In his zeal to convince his paymasters and himself that he had succeeded, he named the new world's natives as Indians and their sacred *chiles* "red" pepper—two unpardonable obfuscations that have confused people to this day.

Pope Alexander IV was drafted in to keep the two expansionist powers apart; the result was the treaty of Tordesillas, which granted all discoveries west of a mid-Atlantic meridian to Spain, and those east of it to Portugal. But the Spanish clung to the possibility of a western end-run to the Spice Islands, and financed Ferdinand Magellan on what would become the first circumnavigation of the earth. Magellan himself was killed in the Philippines, but his sidekick, Sebastian del Cano, completed the momentous journey—with a landfall at the Spice Islands en route. In 1522 his *Victoria* returned to Europe with a tonne of spices on board. The king awarded him a coat of arms embellished with two cinnamon sticks, three nutmegs and twelve cloves.

But the Portuguese had pipped Spain to the post. They had captured the vibrant free-trading port of Malacca, in what is now Malaysia, in 1511. Using the intelligence they gathered there, they made it to the promised land: the tiny Banda Islands, the world's only source of nutmeg and mace, which they reached the following year. Nutmeg is the pit of the nutmeg tree's fruit, and mace, which commanded and still commands a higher price, is the delicate red aril which comes between the pit and the fruit's husky exterior. Chaucer extolled "nutmuge put in ale..." and it remains an essential part of Coca-Cola's secret formula.

After filling their holds, the Portuguese began their return. One ship ran aground, stranding its crew on a remote island. Hearing of a strange race of white men in his parts, the sultan of Ternate, the most powerful of the clove isles, sent for them—and so the Europeans found the last secret source of spice.

Look out from the expansive verandah of the sultan's palace in Ternate and one of history's great microcosms lies before you. Dominating one side is Gamalama, the

island's temperamental volcano. Opposite it stands its equally fickle twin on the island of Tidore. The two spits of land, not a mile apart, are now almost unknown beyond their immediate vicinity. But five centuries ago their names were uttered with breathless excitement across Europe as their rulers, ancient rivals, played the new great powers off against each other with promises of limitless wealth.

Dark, husky aromas swirl through the palace as incense made specially of local spices finds its way into the thick tropical air. The place is overflowing with gifts from distant customers: priceless Chinese vases, exquisitely carved Indian daggers, fine Venetian glassware, all of them evidence of the influence these rulers once wielded. Ask politely, and you might be allowed to gaze—from a respectful distance, and only after much ceremony—at the sultan's magical crown, its hundred sparkling gemstones hanging heavy like ripe peaches. You are not the first impressionable tourist here. Francis Drake gushed about the palace, especially its 400-strong harem. And it seems that it's still good to be the king: one of the gifts on display is an enormous modern settee, helpfully labelled "Lazy chair: for the sultan to take naps."

For much of the 16th century, Spain and Portugal tried to win control of the trade in cloves that made such a lifestyle possible. This meant entangling themselves in the long-running rivalry between the rulers of the two islands, who were in-laws. The European powers would build alliances and forts in one place and then the other, only to find themselves kicked out or caught up in endless intrigues and feuds. After decades of this Machiavellian palaver the Portuguese emerged as the top European player in the clove market, but they never really made it a monopoly. Indeed, they allowed the Dutch, who were growing increasingly anxious for a piece of the action, to be their chief distributors in the north and west of Europe. After Spain gobbled up Portugal in 1580, though, the trade changed again. The Spanish tightened control of the market to which they now had exclusive access, cutting the Dutch out of the picture and raising prices across the continent.



Nutmeg



onvinced that they had to find a way to control the source of the spices, the Dutch got their act together. In 1602 they formed the Dutch East India Company (the *Vereenigde Oost-Indische Compagnie*, VOC), an association of merchants meant to reduce competition, share risk and realise economies of scale. Other European countries also formed East India companies—everyone from Portugal to Sweden to Austria had a go—but none was ever as successful in the spice trade as the VOC. By 1670 it was the richest corporation in the world, paying its shareholders an annual dividend of 40% on their investment despite financing 50,000 employees, 30,000 fighting men and 200 ships, many of them armed. The secret of this success was simple. They had no scruples whatsoever.

The VOC's first conquest was the Banda archipelago.

## Hot chile

Oh Blessed Incomparable Chile, ruler of all things... I give thee thanks for my digestive health, I give thee thanks for my very life!" Thus the Transcendental Capsaicinophilic Society, one of the worrying number of cults devoted to *capsicum*: chiles or "red" pepper.

If it sounds as if they are on drugs then so, in a way, they are. Paul Bosland of the Chile Pepper Institute in New Mexico reckons they and all chileheads are high on endorphins, painkillers released by the body to block the sting of the capsaicin which gives chiles their bite.

The addicts are spread all over the world. Travelling on the back of the European spice trade, America's chiles have since colonised every corner of the earth so thoroughly that everyone thinks they have always been around. Even the top man at the

Indian Spices Board refuses to accept that chiles are an import, pulling dubious sanskrit references from the Vedas to bolster his point. His clinching argument? "Indians can go months without touching black pepper, but not a day goes by that we don't eat chile peppers."

This is fast becoming true everywhere else, too. Americans' consumption of chile has doubled over the past two decades; they now use the spice in almost everything. Salsa now outsells ketchup as America's top condiment. But black pepper still gets all the glory as the world's most important traded spice. Unlike its fickle namesake, red pepper grows like mad all over the place. So though there may be a great demand for it, no one makes much money out of trading it. Bad news for traders, good news for foodies.

Unlike the sultans of the clove islands, who relished the attention lavished upon them by their European suitors and the opportunities for mischief that came with it, the fiercely independent Islamic merchants of the *Bandas* had never allowed Spain or Portugal to build forts on their islands: they insisted on their freedom to trade with all nations. This independence proved their undoing, since it encouraged the VOC to put the nutmeg trade first on its order of business.

For a taste of *Banda's* romance nothing beats a trip to Run, an explosion of nutmeg trees in the middle of a turquoise sea. Reaching it after a night aboard ship is a magical experience; scores of dolphins dart about your bow-wave as the first glints of sunrise streak across the sky. It feels much as it must have done when English adventurers first claimed the place, making it the country's first colony anywhere. Not much of a colony, it must be said: the island is so small that even a modest fishing vessel can come ashore only at high tide. Yet this seemingly insignificant toe-hold in nutmeg-land so exercised the Dutch that they traded away a promising young colony on the other side of the world to secure it. That island was New Amsterdam, now better known as Manhattan.

The purchase of Run demonstrates the VOC's persistence; it does not do justice to

the company's cruelty (normally, but not exclusively, meted out to non-Europeans). Its most successful head, Jan Pieterszoon Coen, had earlier convinced the reluctant *Bandanese* of his firm's God-given right to monopolise the nutmeg trade in a more typical style: he had had every single male over the age of fifteen that he could get his hands on butchered. Coen brought in Japanese mercenaries to torture, quarter and decapitate vil-

lage leaders, displaying their heads on long poles. The population of the isles was 15,000 before the VOC arrived; 15 years later it was 600.

When they turned to the clove trade the Dutch had no time for the squabbling politics of Ternate and Tidore. The VOC uprooted all the Sultans' clove trees and concentrated production on Ambon, an island where its grip was tight. By 1681, it had destroyed three-quarters of all nutmeg trees in unwanted areas and reorganised farming into plantations. It imposed the death penalty on anyone caught growing, stealing or possessing nutmeg or clove plants without authorisation. It drenched every nutmeg with lime before export, to ensure that not one fertile seed escaped its clutches. Yet high on its hillside Afo lives to tell its tale.



limb through the dense, aromatic forests that cover the steep slopes of Ternate's volcano, and you will find this living testament to the ultimate futility of monopoly. Nearly 40 metres tall and over 4 metres round, Afo is the world's oldest clove tree, planted in defiance

of the Dutch ban nearly four centuries ago. Despite the VOC's extreme precautions, Afo's sister seedlings, stolen in 1770 by an intrepid Frenchman (curiously, named *Poivre*), ended up flourishing on the Seychelles, Réunion and especially Zanzibar, which later became the world's largest producer of cloves. By the end of the 18th century the emergence of these rivals had broken the Dutch monopoly for good.

By that time the VOC was already a hollow mockery of its original ghastly self. As early as the end of the 17th century, careful analysis of the books shows that its volume of trade was reducing every year. Even a monopoly so ruthlessly enforced could not help but leak, and the VOC's overheads were huge—tens of thousands of employees, garrisons, warships. Decades of easy rents had created a corrupt and inefficient beast. By 1735, dwindling spice income had been overtaken by textiles in the company's profit column. In 1799, the most vicious robber baron of them all met its final end. The VOC went bankrupt.

The demise of the VOC was not just a pleasing comeuppance. It was evidence that, in just two centuries, Europeans had changed the spice trade forever. The spices that were once limited to tiny islands in hidden archipelagoes were being grown around the world and in large quantities. Trade routes that spanned oceans were becoming commonplace and, as such, competitive. The Dutch did their best to buck the trend, destroying their stocks so blatantly that, according to one observer, the streets of Amsterdam were "flooded with nutmeg butter". But it was all in vain. Spices were no



Afo, the survivor

**The secret of this success was simple. The Dutch had no scruples whatsoever**

longer that hard to come by. Monopolies gave way to markets.

Those markets remained rich in romance; the allure of the trade, its role as a cultural crossroads, its many rival players, its uncertainties and its opportunities for smuggling (even relatively cheap spices carry a lot of value for a given weight) kept the spice bazaars of Kerala, Ambon and Rotterdam fascinating. And lucrative, too; though no one could control the overall flow of spice any more, information could still be rushed ahead fast enough—or sequestered behind long enough—for people in the know to make a killing. Now, though, the information itself has started to flow freely. “There just aren’t so many secrets any more,” reflects a spice trader in Rotterdam. “The farmers in Vietnam are walking around with mobile phones. They know the market price as soon as I do.”

Such traders are now caught in a trap. Their space for bargaining and trade, opened up with the end of monopoly production, is being hemmed in by ever more powerful purchasers—the food giants and spice multinationals. In an age of free-flowing information these buyers can bypass the markets and go directly to the source. From Jewtown, still the key pepper entrepôt, to Rotterdam, London and New York, the main international markets, spice traders are a dying breed. One industry veteran reckons that only a fifth of the trading concerns that flourished 30 years ago are still in business.

Their problems stem from men like Al Goetze. Meet him in his office near Baltimore, at the staid headquarters of McCormick, the world’s largest spice firm, and his conservative suit and dry manner might lead you to mistake him for a stuffy corporate type. But to his admiring colleagues he is “a modern day Marco Polo.”



Procurement managers at food-processing firms were once content to purchase spices through brokers, never leaving the comfort of their air-conditioned offices. Mr Goetze hits the road. He and his men have travelled to nearly every country on earth that grows spices,

again and again. McCormick has set up joint-ventures or wholly owned subsidiaries in over a dozen key spice-producing countries in recent years.

Once the reason for going to the source was price. Now, Mr Goetze says, quality is what matters. Both American and European regulators, prompted by increasing consumer awareness of food safety, have been cracking down hard on impurities. Mr Goetze points to an unlikely assortment of objects in a display case: stones, rusty nails, giant cockroaches, plastic beach sandals. All were crammed into bursting burlap bags and sold to McCormick with its spice. Big processing firms and marketers, frightened that such stuff—or, worse, microscopic impurities that come with it—might make it to the dinner plates of litigious customers, are going straight to the source to clean things up.

Alfons van Gulick, the head of Rotterdam’s Man Producten, the world’s biggest and most influential spice-trading firm, is understandably unimpressed: “McCormick should stick to polishing its brand and selling, rather than telling countries how to produce spice.” But the people for whose products McCormick and Man Producten compete have an interest in Mr Goetze’s strat-

egy. The Indian Spices Board is already helping members improve standards and obtain seals of approval such as ISO certification. The hope is that, over time, producers can go downstream and capture more of the fat margins that come with the “value-added” processing now done in rich countries.

Industry analysts are sceptical about vertical integration. In other commodities it has not been much of a success. Cutting out the middleman may pose unexpected problems for conservative multinationals, unfamiliar with the culture and risks involved in going upstream. And then there is volatility, on which middlemen thrive and which farmers and multinationals dislike. Asked whether the trade has lost its mystery, one animated trader replies “Mystery? I experience it every day when I try to figure out what is going on with prices in this market!”

Producers hate this, and have made various attempts to iron out the market’s ups and downs. The International Pepper Community—which includes India, Indonesia and Brazil among its members—has tried for decades to form a producers’ cartel to boost prices, without any success. Price fixing by vanilla growers in Madagascar succeeded for a while, but then Uganda flooded the market with cheaper beans. Indonesia and Grenada, the top producers of nutmeg, managed to boost prices for a few years by limiting supply, but cheating quickly scuppered the arrangement. Quiet talks are underway between top cardamom producers in India and Guatemala, who produce nearly all the world’s output, to restrict supply; it may work for a while, but not for long.

Every decade or so, an ambitious individual trader tries to do with money what the producers cannot do by agreement. To corner the pepper market would offer huge riches, and so people regularly have a go. Half a century ago, it was an Armenian; a decade ago, an American. Now it appears that a shadowy Indonesian tycoon may be making a play for at least the white pepper market. But history teaches that such grandiose efforts at monopoly face an uphill struggle. And though it may be possible to milk them for a while, the modern day economics of the trade ensure that they cannot last. The spice trade, once the stuff of legends, has become a market much like any other. And a taste of luxury beyond the dreams of almost every human in history is available to almost everyone, almost everywhere.

**Stones, rusty nails, giant cockroaches, plastic beach sandals, all crammed into bursting burlap bags and sold with the spice**



# Road design? He calls it a revolution

By Sarah Lyall

**DRACHTEN, Netherlands:** "I want to take you on a walk," said Hans Monderman, abruptly stopping his car and striding — hatless, and nearly hairless — into the freezing rain.

Like a naturalist conducting a tour of the jungle, he led the way to a busy intersection in the center of town, where several odd things immediately became clear. Not only was it virtually naked, stripped of all lights, signs and road markings, but there was no division between road and sidewalk. It was, basically, a bare brick square.

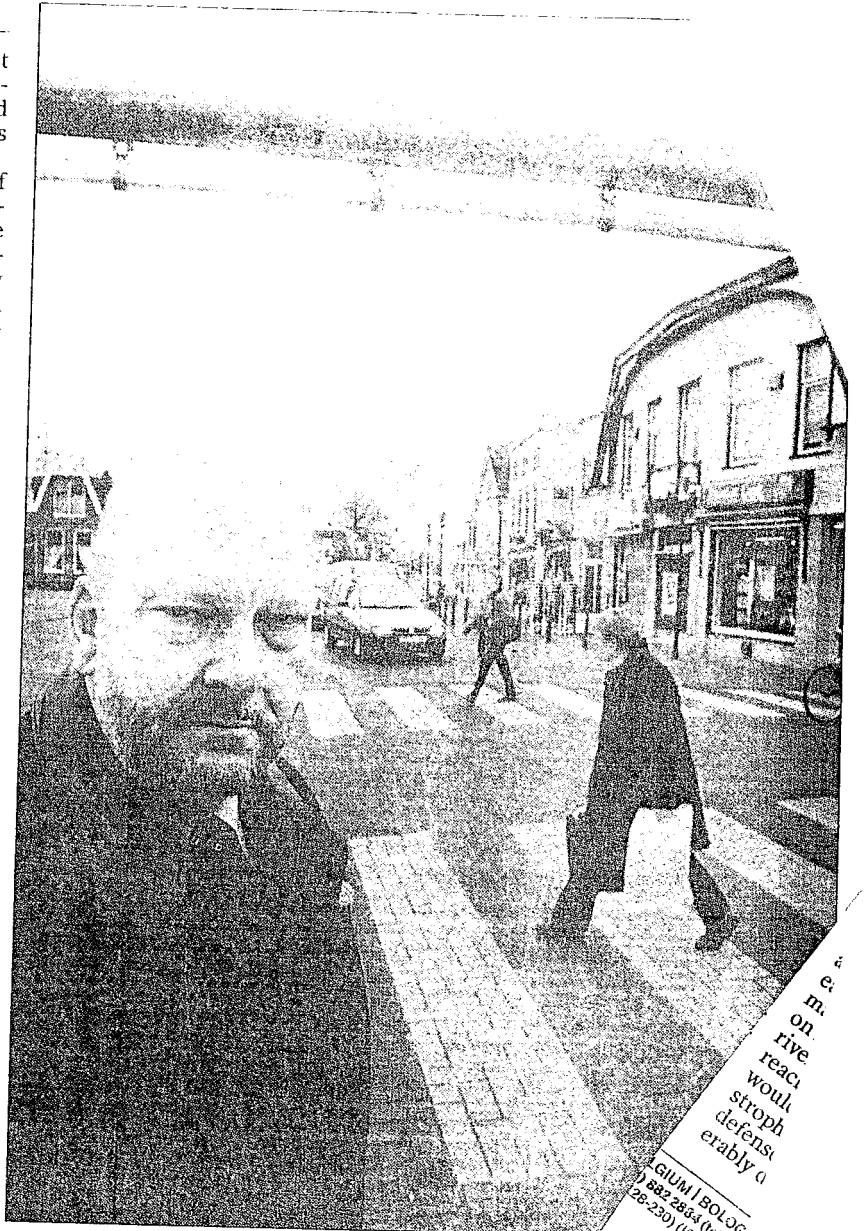
But in spite of the apparently anarchical layout, the traffic, a steady stream of trucks, cars, buses, motorcycles, bicycles and pedestrians, moved along fluidly and easily, as if directed by an invisible conductor. When Monderman, a traffic engineer and the intersection's proud designer, deliberately failed to check for oncoming traffic before crossing the street, the drivers slowed for him. No one honked or shouted rude words out the window.

"Who has the right of way?" he asked rhetorically. "I don't care. People here have to find their own way, negotiate for themselves, use their own brains."

Used by some 20,000 drivers a day, the intersection is part of a road-design revolution pioneered by the 59-year-old Monderman. His work in Friesland, the district in northern Holland that takes in Drachten, is increasingly seen as the way of the future in Europe.

Variations on the shared-space theme are being tried in Spain, Denmark, Austria, Sweden and Britain. The European Union has appointed a committee of experts, including Monderman, for a Europe-wide study.

His philosophy is simple, if counter-intuitive. To make communities safer and more appealing, Monderman argues, you should first remove the traditional paraphernalia of their roads.



Herman

Hans Monderman advocates a "shared space" philosophy

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*Drachten, Friesland, The Netherlands*

# Who has the right of way? Road design expert doe

TRAFFIC, From Page 1

That means the traffic lights and speed signs; the signs exhorting drivers to stop, slow down and merge; the center lines separating lanes from each other; even the speed bumps, speed-limit signs, bicycle lanes and pedestrian crossings. In his view, it is only when the road is made more dangerous, when drivers stop looking at signs and start looking at other people, that driving becomes safer.

"All those signs are saying to cars, 'This is your space, and we have organized your behavior so that as long as you behave this way, nothing can happen to you,'" said Monderman. "That is the wrong story."

The Drachten intersection is an example of the concept of "shared space," a street where cars and pedestrians are equal, and the design tells the driver what to do.

"It's a moving away from regulated, legislated traffic toward space which, by the way it's designed and configured, makes it clear what sort of behavior is anticipated," said Ben Hamilton-Baillie, a British specialist in urban design and movement, and a proponent of many of the same concepts.

Highways — where the car is natur-

ally king — are part of the "traffic world" and another matter altogether. In Monderman's view, shared-space plans thrive only in conjunction with well-organized, well-regulated highway systems.

Monderman is a man on a mission. On a daylong automotive tour of Friesland, he pointed out places he had improved, including a town where he ripped out the sidewalks, signs and crossings and put in brick paving on the central shopping street. An elderly woman crossed slowly in front of him.

"This is social space, so when Grandma is coming, you stop, because that's what normal, courteous human beings do," he said.

Planners and curious journalists are increasingly making pilgrimages to meet Monderman, considered one of the field's great innovators, although until a few years ago he was virtually unknown outside of Holland. Hamilton-Baillie, whose writings have helped bring Monderman's work to wider attention, remembers with fondness his own first visit.

Monderman drove him to a small country road with cows in every direction. Their presence was unnecessarily reinforced by a large, standard-issue European traffic sign with a picture of a cow on it.

"He said, 'What do you expect to find here? Wallabees?'" Hamilton-Baillie recalled. "They're treating you like you're a complete idiot, and if people treat you like a complete idiot, you'll act like one."

"Here was someone who had rethought a lot of issues from complete scratch," Hamilton-Baillie said.

"Essentially, what it means is a transfer of power and responsibility from the state to the individual and the community."

Dressed in a beige jacket and patterned shirt, with scruffy facial hair and a stocky build, Monderman has the appearance of a soccer hooligan but the temperament of an engineer, which indeed he trained to be. His father was the headmaster of the primary school in their small village; Hans liked to fiddle with machines. "I was always the guy who repaired the TV sets in our village," he said.

He was working as a civil engineer building highways in the 1970s when the Dutch government, alarmed at a sharp increase in traffic accidents, set up a network of traffic-safety offices. Monderman was appointed Friesland's traffic safety officer.

In residential communities, Monderman began narrowing the roads and putting in design features like trees and

flowers, red brick paving stones and even fountains to discourage people from speeding, following the principle now known as psychological traffic calming, where behavior follows design.

He made his first nervous foray into shared space in a small village whose residents were upset at its being used as a daily thoroughfare for 6,000 speeding cars. When he took away the signs, lights and sidewalks, people drove more carefully. Within two weeks, speeds on the road had dropped by more than half.

In fact, he said, there has never been a fatal accident on any of his roads. Several early studies bear out his contention that shared spaces are safer. In England, the district of Wiltshire found that removing the center line from a stretch of road reduced drivers' speed without any increase in accidents.

While something of a libertarian, Monderman concedes that road design can do only so much. It doesn't change the behavior, for instance, of the 15 percent of drivers who will behave badly no matter what the rules are.

Nor are shared-space designs appropriate everywhere, like in major urban centers, but only in neighborhoods that meet particular criteria. Recently, a

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