

HORIZON

AUTUMN, 1966 · VOLUME VIII, NUMBER 4

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Pandora in the Laboratory



DARWIN

Bishop Wilberforce was not the Inquisition, the nineteenth century was not the seventeenth, and Victorian England was not the Rome of the Renaissance popes. Therefore Charles Darwin was not hauled away from his home to face charges of heresy and to be forced to recant the theory of evolution. Yet the attack launched against his theory by the British Establishment was hardly less savage than the condemnation pronounced by the Holy Office against the teachings of Galileo. Just as Galileo's sin, in the eyes of the Inquisition, lay in his denial of an earth-centered universe, Darwin's sin, to contemporary minds, was his disproof of the literal story of Genesis.

The uproar over these religious side effects, described in an article by J. W. Burrow in this issue of HORIZON, served only to distract attention from the true implications—for both evil and good—of scientific discovery. Galileo, like Copernicus before him and Newton after him, was up to something fraught with far greater peril than the refutation of Joshua's notions about the sun. These founders of modern physics were inventing the scientific method. By its application their successors contrived all the material blessings of Western civilization—and then, in our own time, contrived the Bomb. For twenty y
kind has stood appalled at the swarm
winging out of this Pandora's box whicl
of Galileo finally pried open. It has b
enough to make Luddites of us all.

Darwin's genius turned the key i
magic box. His successors in the biol
ences have been working for a centur
pry off the lid. In the brilliant burst of
that followed the Watson-Crick hyp
1953, biochemists have finally broken t
of the genetic code and revealed th
nism of human heredity. Already we
know enough to breed out of the hu
many of its grosser defects. Such tecl
artificial insemination, the sperm bank, a
embryos seem to some imaginative bi
offer prospects for a more or less swift
of the human species. "Genetic surgeor
operating on the microscopic filamen
chromosome, to replace defective gene
haps perfectly good genes with even b
Do you want a baby with blue eyes, str
an I.Q. of 150? Perhaps it can be arrange

Into whose hands will fall this awesor
over the future of the human race? Wil
seize it to breed a race of brainwashed s
Will a mad scientist employ it to gro
creatures—perhaps human monsters—i

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HORIZON

A Magazine of the Arts

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e soberly, might one nation, through powers ersuasion or coercion, use the techniques of dity to raise the overall I.Q. of its population? ıe only thing we can reasonably assume is power of this sort, once understood, will not ınused. There appears to be every prospect the second half of the twentieth century will ess the sort of spectacular development in ogical science that the first half of the century essed in physical science and that, perhaps re the century is over, man will be able to t some measure of control over the evolution his kind. While nightmarish possibilities ainly exist in any such control, it would never-ss be foolish to assume that they will over-ow the beneficent uses of genetic knowledge, ıe Bomb has overshadowed the beneficent of atomic energy. If the discoveries of genetic ıce are applied with wisdom and caution, over riod of generations, man may succeed in im-ing the basic human stock. Perhaps such a of men, a step higher on the evolutionary , will even be able to keep the Bomb under rol, and dispel the Doomsday threat that s over twentieth-century man. Then it may een that the magic box unlocked by Dar-contained the only permanent cure for the ors that eventually flew out of the box un-ed by Galileo.

J.J.T.

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COVER: The Bayeux Tapestry, a 230-foot length of embroidery that tells the victors' version of the Norman Conquest, depicts Harold of England as a mustachioed gentleman, hawk on his wrist and spurs on his boots. He is riding to a rendezvous with Duke William of Normandy in the summer of 1064. The bird in the upper border is one of many decorative animals that adorn this eleventh-century masterpiece. Harold was a brave and princely man, but his encounter with William in France was eventually to cost him his kingdom and more. Morris Bishop, the noted biographer, recounts the story, beginning on page 4.

BAYEUX TAPESTRY BY SPECIAL PERMISSION OF THE CITY OF BAYEUX—PHOTOGRAPHS GIRAUDON, EXCEPT WHERE OTHERWISE NOTED



"Harold sacramentum fecit Willelmo duci"—"*Harold makes an oath to Duke William*"—*runs the legend above this climactic scene from the Bayeux Tapestry, the extraordinary piece of medieval embroidery and slanted history which recounts the Norman conquest of England. William of Normandy is on a throne at the left, and Earl Harold, later to be king of England briefly, swears upon two reliquaries that he will be William's man. Harold took this oath in Normandy in 1064, possibly against his will. An oath of fealty was sacred, and when Harold broke it in the year 1066, William—at least in medieval opinion—needed no further excuse to invade England.*



1066

OR THE TALE OF WILLIAM THE BASTARD, DUKE OF NORMANDY; OF KING HAROLD'S SACRED OATH, WHICH WAS BROKEN NONETHELESS; OF THE CRUEL BATTLE THAT ALTERED HISTORY (INCLUDING OURS); & OF THE BAYEUX TAPESTRY, STITCHED UP FOR THE VICTORS. ALL RETOLD NINE CENTURIES AFTER

BY MORRIS BISHOP

THE FIRST FOUR NORMAN KINGS OF ENGLAND

On a jocund day in 1027, or possibly 1028, the tanner's beautiful daughter Arlette, or possibly Herleve, was dancing in the road below the castle of Falaise, in Normandy. So says one chronicler; another asserts that she was washing the family linen in the brook, with her skirts tucked high. A third maintains that she was washing her beautiful feet. Perhaps all three authorities can be accorded; perhaps she did the laundry, danced in the road, and then washed her beautiful feet. At any rate, all agree that young Duke Robert "the Magnificent" (or "the Devil") of Normandy observed Arlette (or Herleve) and swept her into the castle, and that in 1028 (or possibly 1027) was born William the Bastard, who determined the direction of European history for these nine hundred years.

The stain of bastardy discolored his character and his life. When he attacked Alençon in 1051, the garrison of an outlying guardhouse hung some hides on their walls and shouted: "Hides for the tanner!" ("Hides" had the undermeaning of "whores.") William took the mockery ill. He burned the thirty-two guardsmen out of their stronghold, cut off their hands and feet, and catapulted the one hundred and twenty-eight extremities into the city, which surrendered.

He was a brooding, angry boy. When he was about seven, his father named him successor to the dukedom and went pilgrim to Jerusalem, dying on the journey. But woe to the land whose prince is a child, and double woe if he is a bastard! His mother married a viscount and left William in the care of guardians. The nobles immediately disregarded their oaths of fidelity, built forbidden castles, and entered upon a course of mutual extermination. They killed William's guardian and his tutor. A party sought William in the castle of his seneschal and stabbed the seneschal in his bed, unaware that the boy was clutching him under the tossed bedclothes. He emerged later covered with blood. While his maternal uncle hid him in the homes of peasants and woodcutters of the Norman forest, a vassal of the seneschal tracked down the assassins and stabbed them in *their* beds, according to the precedent they had set.

The savage nobles, and even the king of France, took advantage of the little duke's weakness. But fortunately they were too jealous of one another to unite effectively against him. The leader of the rebels was Roger de Tosny, who had fought the infidel in Spain, and whose wont it was to serve the boiled head of a Saracen at his mess, no doubt as a kind of centerpiece. He and many other malcontents were killed in a gigantic tourney to the death (the widows of the dead married the unwed victors). William thus was able to assume command of his faithful when barely adolescent. He was familiar with plots, bloodshed, torture, death. He had no boyhood, and evidently no education, except in war. He learned that he must rule or be ruled, kill or be killed. He must fight and win; he must seize and hold. He was taking the character and learning the trade of the Conqueror.

He was tall for his times; his extant femur indicates a height of five feet ten inches. He was muscular and enduring, but in middle age he got fat. He had a harsh, guttural voice. In the Bayeux Tapestry he looks more French than Viking, perhaps with good reason, for his mother may have been French and his paternal grandmother, Judith of Brittany, was apparently Celtic. Probably he was only a quarter Scandinavian. (The tapestry likenesses are unreliable, however; William's hair appears now black, now red, now yellow or blue.) He was devout, temperate in eating and drinking—he hated drunkenness and drinkers—and chaste. He seems never to have had a mistress or concubine. He courted, first for advantage and then for love, Matilda, daughter of the count of Flanders. She was a great match, a descendant of Charlemagne and Alfred the Great of England. She was very small; her skeleton stands only four feet two inches high. But she burst with vigor and spirit. The



BRITISH MUSEUM

story runs that when the marriage was proposed, she cried: "I would rather be a veiled nun than be given to a bastard!" But William was not a Conqueror for nothing. He invaded her quarters, dragged her round the room by the hair, and kicked her until she gave her consent. The union was very happy. Tiny Matilda bore him nine children (possibly ten), gave him constant good advice, and served as regent on occasion.

We look now across the Channel to England. Its ruler was Edward ("the Confessor"). His mother was William's great-aunt. He spent most of his life in Normandy, until he was summoned to rule England in 1042. Edward was very good, very weak, and childless—more monk than king, everyone said, and impotent besides. He packed his government and his church with Normans. William paid him a visit in Westminster and reported afterward that Edward had formally offered him the succession to the English throne. Probably he did; but there were no witnesses, and the crown was not his to offer.



This thirteenth-century English miniature portrays William the Conqueror (top left), his son and successor, William Rufus (top right), Henry I (bottom left), who was also a son of the Conqueror, and Stephen, the fourth Norman king and a grandson of William. The four hardly rank among England's best-loved monarchs. William I was harsh and vindictive. William Rufus, inept as well as cruel, met his death in a hunting accident that may have been murder. Henry I was a competent king and placated his subjects by marrying an English princess, but Stephen's reign, which began in 1135, was marked by dynastic struggles and almost constant bloodshed.

The most powerful man in England was Harold, son of Earl Godwin of Wessex and brother of Edward's queen. He was very tall, mighty, blond, Nordic; he was also honorable, hearty, and gay, a sportsman, an English country gentleman, much beloved in his time and still beloved. The England that he controlled, under the king, had a population of about a million and a quarter. It was a civilized land with effective government and administration, laws, currency, communications; it had its own thriving literature, its own distinctive art; it was far more peaceful than Normandy. If we could visit it, we should recognize much that is familiar—the rolling, furrowed fields, the huddling thatch-roofed villages, the graceful dispositions of English landscape. But we should see no castles and great houses and only rare, humble churches; for roads we should have only the weedy, pitted Roman ways and farmers' tracks. Chiefly we should be struck by the great forests of oak, ash, and beech, where wolves still dwelt, as did woodcutters and charcoal burners, and shy Gurth the swineherd with his charges.

In 1064 Edward the Confessor was sixty-two years old and was worried about his own future and England's. Out of concern for the first he was building Westminster Abbey, but his provisions for the second are obscure and disputed. (Here and elsewhere we shall not argue the case, but shall choose the likeliest presumption and go on.) King Edward, then, sent Harold to the Continent, very likely to confirm his choice of William as his successor, or to make some sort of deal with him.

Harold undertook the unwelcome task. His ship missed its mark and came ashore near Saint-Valéry at the mouth of the Somme, on the territory of Count Guy de Ponthieu. Count Guy treated him as a shipwrecked sailor; that is, he clapped him in a dungeon and held him for a thumping ransom. But Duke William demanded Harold's release and sent a deputation to conduct him in all honor to Rouen.

William and Harold immediately liked and respected each other. They hunted, hawked, and feasted together, and certainly talked politics. (Harold must have had adequate French.) William took Harold to a little war against Brittany and rewarded his prowess by dubbing him knight. This honor was a trap; according to feudal practice the knight was bound by fealty to the dubber. William could not bear to let his dear friend depart for England. Finally he made a bargain: he would give Harold his daughter's hand in marriage and free return to England, but he would require Harold's oath that he would support William's succession to the English throne. Harold agreed, being well aware that an ordinary oath made under duress is not binding.

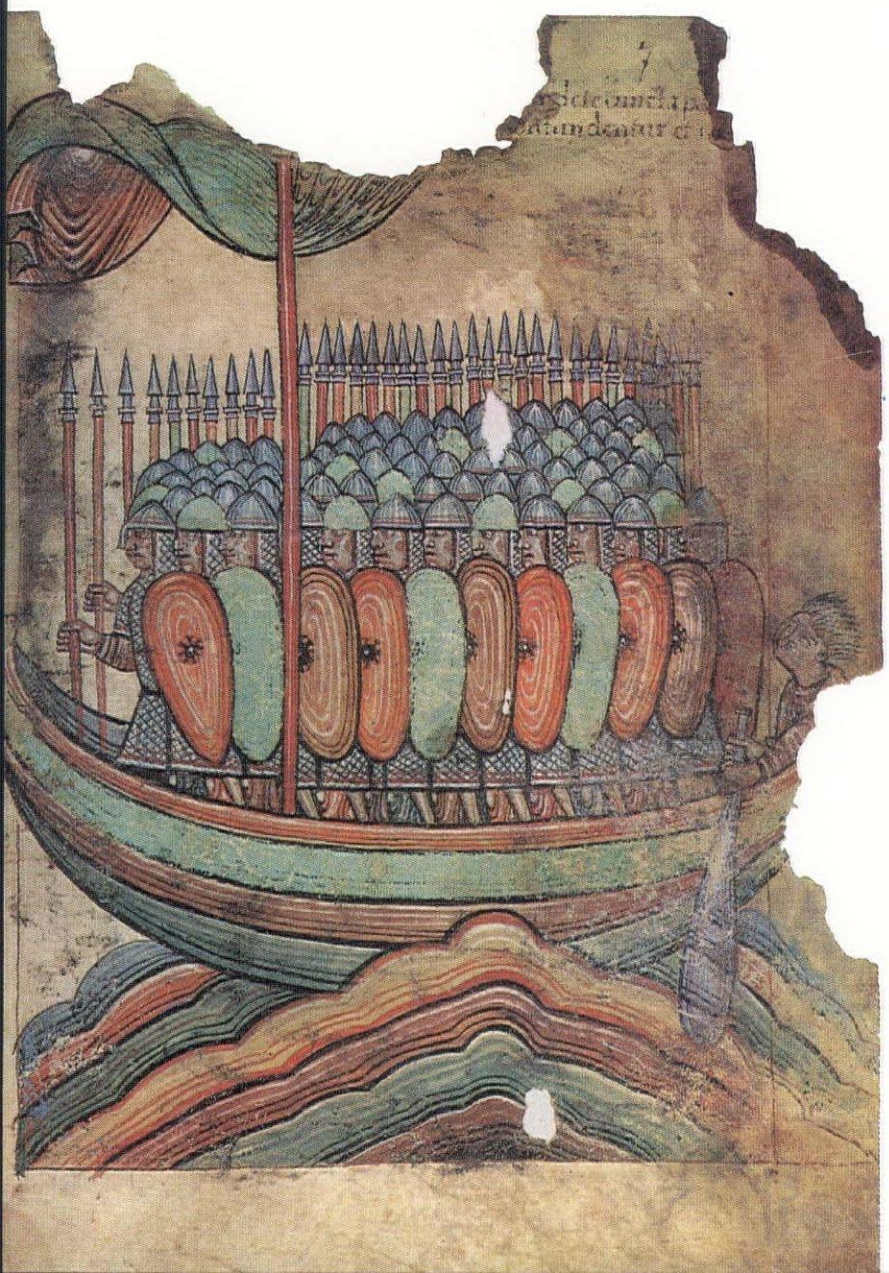
The ceremony of oath taking was held in Bayeux. William had his clergy assemble the holiest relics of the dukedom, and concealed them in a chest. Harold swore to be William's man. And then, as described in the doggerel verse of the Norman chronicler Wace:

Then kneeling, and still with his hand on the Chest
In reverent guise he his lips to it press'd.
As he rose to his feet, the Duke took his hand,
And fast by the Chest bade him still keep his stand;
The Pall he uprais'd, and made Harold aware
How solemn an Oath on such Relics he sware.
And he, when he saw what was hid by the Veil,
*And what he had sworn upon, felt his heart quail.**

Well may his heart have quailed. He could not deny having sworn; there were too many witnesses. He could not dismiss the sanctity of the oath; the guarantors were the holy saints themselves. William had got the feudal world, the Church, and heaven itself to support his claim to the English crown.

Harold returned to England to make his ominous report to the king. He dodged marrying William's daughter, in ungentlemanly style, and ruled England as a sort of prime minister while everyone waited for King Edward to die. In 1065 Harold was forced to depose his troublesome younger brother, Tostig, from his earldom of Northumbria. Tostig went to Flanders and devoted himself to plotting against the English regime.

* Translated into English doggerel by Sir Alexander Malet, Bart., B.A., London, 1860.



On January 5, 1066, Edward the Confessor died. On his deathbed he named Harold heir to the kingdom. But according to English custom this was a mere nomination the nobles chose their king from the men of royal blood. Already the great were gathered expectantly in London. They met as soon as their king had ceased to breathe and elected Harold as his successor. On the very day of Edward's burial in the new Westminster Abbey, Harold was crowned by the Archbishop of York.

Thus the terrible year of 1066 began. In April appeared a portent in the heavens—a long-tailed comet, as large as a full moon; it was visible for two weeks. This was Halley's comet, which returns every seventy-six years, always bringing trouble.

William was now determined to be king of England. He made his preparations with the utmost astuteness. He appealed to public opinion—noble public opinion, of course—by demanding that Harold renounce his usurped crown. He asked the pope's blessing on a punitive expedition into England, a country recalcitrant toward papal authority, lax in enforcing clerical celibacy, and dilatory in remitting Peter's pence to Rome. The pope replied by authorizing William to invade England and to see to the collection of Peter's pence; he also sent a bull excommunicating Harold and his partisans, a consecrated battle banner, and a diamond ring containing a hair and a tooth of Saint Peter. Thus the Western conscience was rallied to the support of the invader. A dynastic quarrel, a plundering raid, took on the character of a crusade.

William dealt with his nobles in general councils and in innumerable private interviews. His country was momentarily at peace, and his gentlemen were bored. He made alluring promises of land, loot, rank, and feudal rights in a rich land that had lost the way of war. He went beyond Normandy to tempt adventurers; important contingents from Brittany and Flanders responded. He organized a fifth column of Normans and pro-Normans in England. He entertained Harold's disgruntled brother Tostig, and encouraged him to make a probing attack on the southern English coast and to form an offensive alliance with the Norwegian freebooter king, Harold Hardrada.

William assembled his men, perhaps eight thousand combatants, plus sailors, grooms, armorers, cooks, and so on. They were quartered along the Norman coast, with headquarters at the mouth of the Dives River, which was then a capacious port. (You may still sleep there in the Hostellerie de Guillaume le Conquérant, roundly alleged to be William's own billet.) The knights supplied their own horses, armor, and weapons, but these had to be in

Aside from the Bayeux Tapestry, few contemporary pictures of Normans or Anglo-Saxons exist. This one, a fragment from an eleventh-century French manuscript, shows a boatload of Norman soldiers on a choppy sea. They carry the pointed shields and long spears which we know were used at Hastings.

BIBLIOTHEQUE NATIONALE

spected and supplemented. The chief need was transport; the building of the ships is vividly illustrated in the Bayeux Tapestry. Says Wace:

The Ports of all Normandy teem'd with new life,
Wherever you turn'd preparation was rife.
Materials and Timber were haul'd to the shore,
Bolts fashion'd, Planks jointed, or brought out of store:
Boats fitted, Ships rigging, Masts rais'd, Sails outspread,
With foresight and outlay in readiness made.

Military men estimate that the transports numbered about seven hundred. If, as seems likely, they were built to a common plan, this is a very early example of mass production. The craft resembled the Viking long ships, long and narrow with shallow draft. Each had a single sail and mast. There were no oars except for a steering oar near the stern on the starboard side; rowers would take too much precious space. The boats could probably not work at all to windward. They must have been very cranky, and restless horses must have been a serious menace in the slightest sea. William was taking a terrific chance on having a fair following wind and not too much of it. And if his expedition should come to grief, his chances of re-embarkation and return were poor.

It was a brilliant supply operation, which included even a prefabricated fort ready for immediate erection. We long to know more; for instance, were tents or other shelter carried? If you let your men sleep out under England's whipping autumnal rains, half of them will be down with terrible colds or pneumonia, weapons and coats of mail will rust, bowstrings will lose their resilience, and there will be no hot food.

The fleet was reported ready in mid-August. Meanwhile Harold had assembled the English militia, the fyrd, to guard against Tostig's raids on the south coast and against the Norman threat. Tostig then went north to plan, with Harold Hardrada, an invasion of England's east coast before winter.

William had now only to wait for a suitable wind to carry him to England. But the breeze blew steadily from the north. During a lull, in mid-September, William moved his fleet northeast along the Norman coast to Saint-Valéry-sur-Somme, forty miles nearer England than Dives. Again he sat down to wait in vain for the wind, which had to be exactly right. Or was his delay deliberate? Had his intelligence sources predicted what actually occurred? In early September Harold was forced to disband his coast-guarding militia, which was raging to get in the neglected harvest. And there is a good likelihood that William was in touch with Tostig and Harold Hardrada, and was glad to time his invasion with that in the north.

Harold Hardrada, with about three hundred Viking dragon ships, entered the Humber and, by September 18, had pushed upstream to Riccall. His army disembarked and marched on York, nine miles away. The earls of Mercia and Northumberland met him at Gate Fulford. In a long and bloody battle they were utterly worsted.

When King Harold, in London, got news of the northern invasion, he immediately assembled his housecarls, or permanent picked troops, and what militiamen he could find. His specialty in war was speed and surprise. His army, mounted, went north on Ermine Street, the old Roman road, making the two hundred miles to York at the rate of forty miles a day, a remarkable feat for both horses and men. He met the Norsemen at Stamford Bridge, beyond York, on September 25. In a great battle his saddle-sore troops destroyed the enemy and killed Harold Hardrada and Tostig. The invaders, who had come in three hundred ships, went home in twenty-four.

Three days after Stamford Bridge, Duke William landed in the south.

On September 27, the persistent west wind at Saint-Valéry had shifted to the south. William gave the crucial order. The ships were pulled into the water and loaded with men, horses, and gear. By sunset the fleet was assembled in the Channel. William took his place in his flagship, which we see in the Bayeux Tapestry with its elaborately carved figureheads, fore and aft. He hoisted a masthead beacon, flaming in an iron basket, as a guide. But at dawn he found that he had lost his convoy. Whatever he felt, he betrayed no qualms. He ordered a very special breakfast, with spiced wine, and displayed "a memorable gayety." And then the flotilla began to appear. It reached the coast at Pevensey at 8:30 A.M.

The crossing was a remarkable feat of navigation, though the distance is only sixty miles. The fleet had to find a sandy or shingly beach on which to disembark, and much of the English south coast was cliff or marsh or forbidding shore. Apparently William aimed for Pevensey and hit it square. The pilots navigated by the stars and intuition, for they had no compasses, and the crescent moon set at 9:15 P.M. Yet only two vessels were lost. One of them carried the expedition's soothsayer. "No great loss," said William; "he couldn't predict his own fate."

Pevensey was a spit of land at the entrance to a shallow tidal harbor, now filled in and transformed into a sheep pasture. A Roman fort stood, and still stands, on the spit. The position is well defensible; a small force of archers could have raised havoc with the Normans wading in from the sea. But the English fyrd had gone home, and the landing was unopposed.

The masts were unstepped and the boats were hauled in as far as possible. The archers were the first ashore. They fanned out in search of hostile troops, and found none. Then the mailed knights and the horses. (How were the horses disembarked over the high sides of the transports? Perhaps ramps were carried, and the horses led into the

TEXT CONTINUED ON PAGE 25

THE BAYEUX TAPESTRY

When William the Conqueror seized control of England, he acquired a great center of medieval art as well as an extensive addition to his realm. The Anglo-Saxons were famous for their manuscript illuminations and drawings, for metalwork and fine carving in ivory and stone. In an era when embroidery was one of the great art forms, their needlework was unsurpassed. Over the centuries most Anglo-Saxon hangings have disappeared, worn to tatters or burned down to recover the gold or silver in their thread. The Bayeux Tapestry—not, strictly speaking, a tapestry but an embroidered hanging—is one of the few that remains.

It was probably commissioned within ten years after the battle of Hastings by William's half brother, Odo, the Bishop of Bayeux and Earl of Kent. These dignities were not sufficient for Odo. He aspired to be king of England or pope, and he commissioned the great tapestry as a piece of propaganda to help his ambitions along. Throughout, it features him in an important position; he is usually shown next to William in the preparations for battle and in the battle scenes. As art, the tapestry was effective. As propaganda it was not, for Odo attained neither the crown nor the papal tiara.

The tapestry is altogether two hundred and thirty feet long, and about twenty inches wide. It is embroidered on bleached linen, and was probably made in a number of separate pieces by a team of women, who stitched over drawings that had been done directly on the linen by an artist. The main story runs through the center, as in a comic strip. In the border at top and bottom are mythological and symbolic beasts and birds and, occasionally, side-light events of the narrative. No one knows whether the huge hanging was originally intended for the Bayeux Cathedral or for one of Odo's palaces in Normandy, England, or Rome. But it is known that a few hundred years after the aspiring bishop's death, it was on deposit in the Cathedral, and it was displayed there each year during the Feast of Relics.

It was not until the eighteenth century that the tapestry received much attention outside Bayeux. Then drawings were made of it, and engravings published, and antiquarians examined it with interest. Despite their attention, it was almost destroyed in 1792, during the French Revolution, when volunteers going off to war tried to requisition it as a wrapping for their provisions. In the nick of time a local conservationist persuaded them that it would be sacrilegious to use it for such a purpose. In 1803 Napoleon, planning an invasion of England, ordered it brought to Paris so that he could study it. There it was placed on public exhibition, to inspire the populace and the army with William's example. During World War II, when the always thorough Germans were entertaining the same dream, they inspected the tapestry too, seeking inspiration or perhaps tactical hints. When events turned out the other way around, and the Anglo-American forces landed in Normandy, the tapestry was rushed to the Louvre for safety. It was not until after the war that the famous tapestry was restored to Bayeux, where it is now on exhibit in one of those technologically perfect, specially lighted, heated, dehumidified, and rather uninspiring shrines which the twentieth century erects around its precious relics.

Our selections, which run through the next five pages, commence about one-third of the way through the tapestry's story, after Harold's return from Normandy and the oath-taking shown on page 4. This section carries the story to the eve of the Battle of Hastings. The battle itself appears in the color foldout beginning on page 17. Now then, the year is 1065 and . . .



Troop movements in 1066



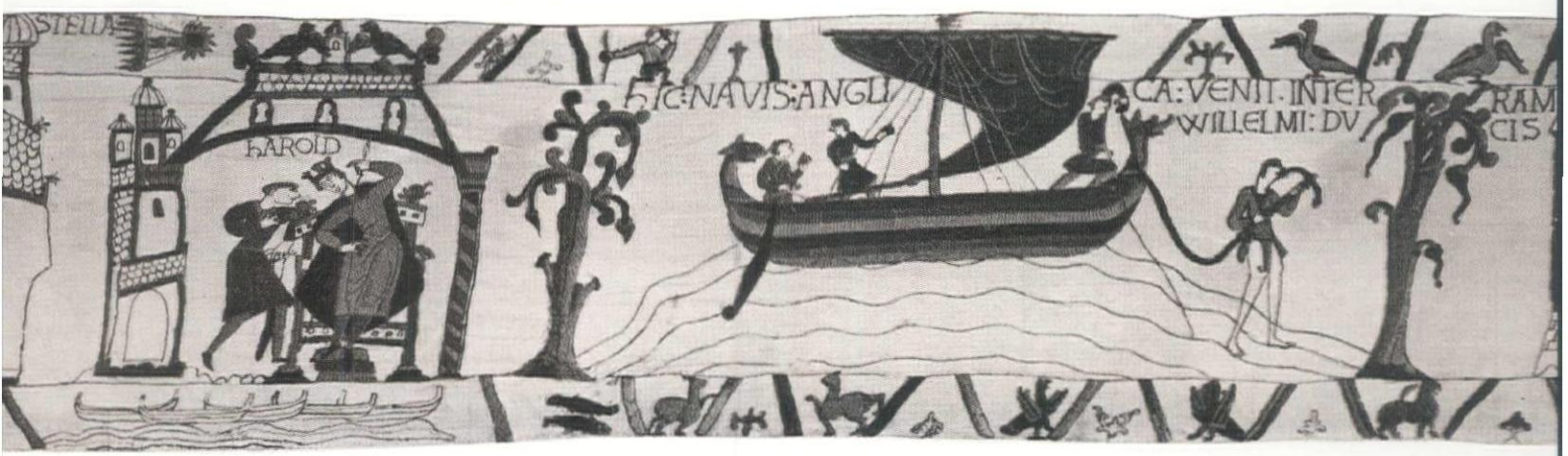
On his return from Normandy, Harold reports his adventures to the aging King Edward in his palace at Westminster.

King Edward's shrouded body is carried toward Westminster Abbey, above which the hand of God appears.



On the upper level of his palace, the dying Edward confers with Harold; on the lower floor, his body is prepared for burial. (These events, and the preceding one, are shown in reverse order by the Bayeux artist.)

Harold sits enthroned as king, flanked by the Archbishop of Canterbury and other dignitaries. In the group of three at the left he is seen accepting the crown; on the right the populace acclaims him.



A "*stella*" appears, looking like a space capsule in the upper border. (It was Halley's comet.) Inside the palace Harold is told of this fearful omen.

A ship sails, carrying to Normandy the news of Harold's coronation, which of course has broken his oath to William, and is a *casus belli*.



William and his half brother, Bishop Odo, having heard of Harold's treachery, order ships to be built.

Workmen immediately get busy felling trees, planing lumber, constructing boats.



Duke William leads his men to the point of embarkation.

Laden with horses and troops, the single-masted Viking-style ships depart in stately procession.



The Normans beach their boats at Pevensey in the south of England. The horses are led out into shallow water.

The army moves on toward Hastings.



A group of workers—*sans pantalons*—drag the completed craft into the water.

Helmets, swords, lances, suits of mail, casks of wine—all the equipment that a first-class eleventh-century army requires—are brought to the shore.



The smaller boats in the background are thought to be dinghies in tow.

William's flagship has a signal lantern on the masthead.



William's army forages for provisions, no doubt to the dismay of the English peasantry. A cow is slaughtered, a pig captured, and a roaring fire lighted under a kettle.

A baker prepares cakes or loaves of bread, and skewers of roasted meat are handed out (a long way from the original home of shish kebab).



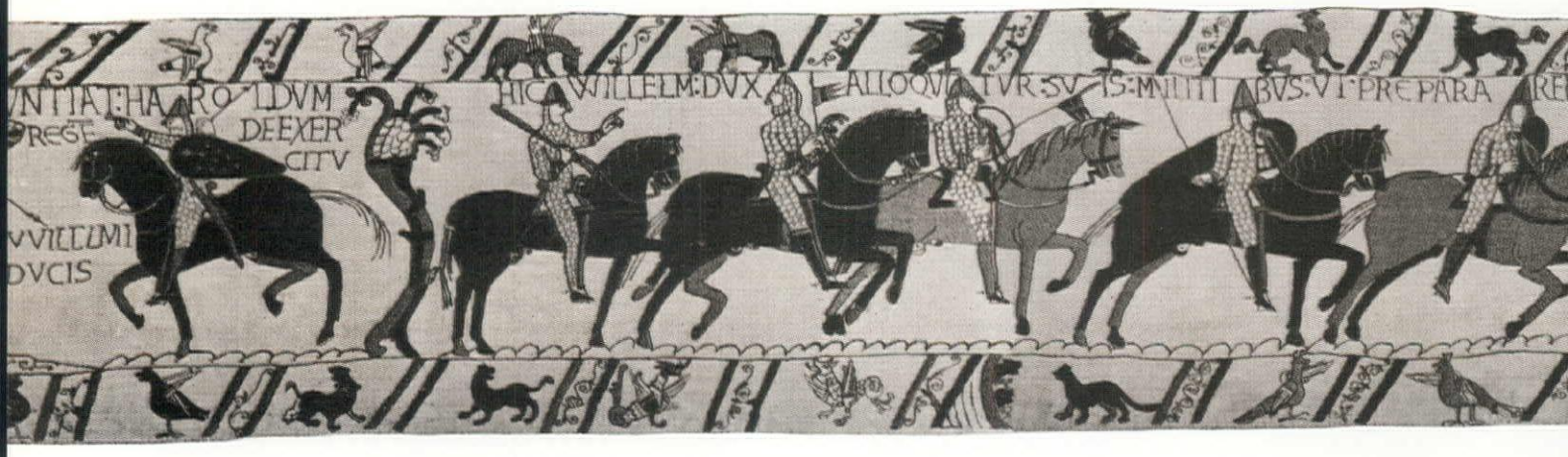
"*Hic fecerunt prandium*"—"Here they have a banquet." While servants prepare the feast, Bishop Odo says grace at William's table.

Men take up their weapons, and to the right of this soldiers set up William's prefabricated fort, brought from Normandy.



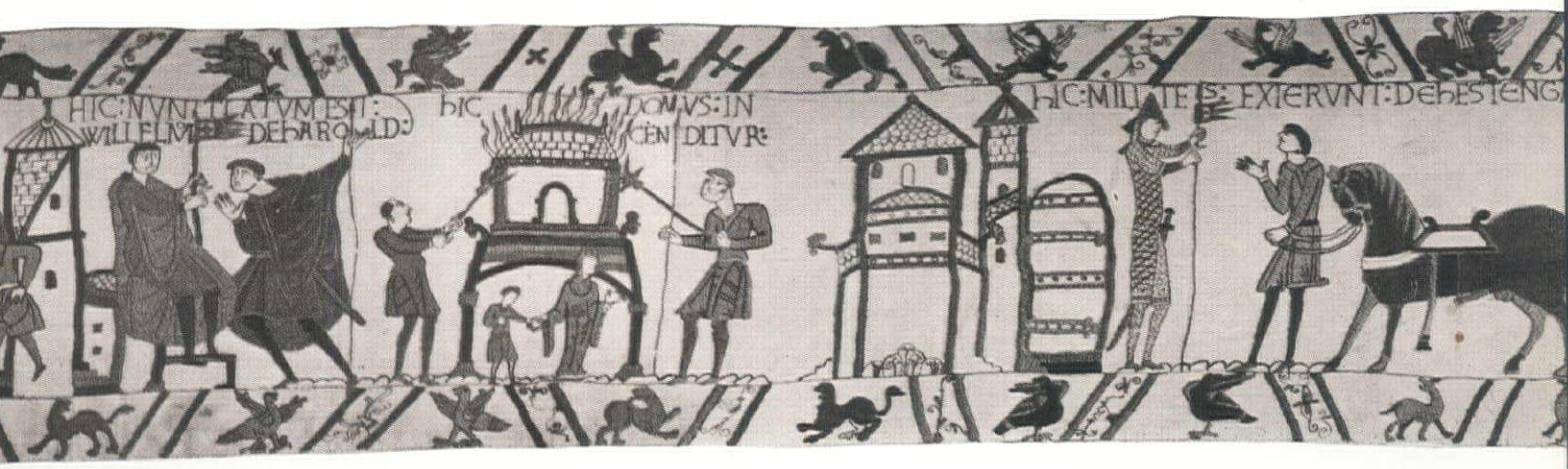
The Norman cavalry is mounted and ready.

The cavalry rides out from Hastings.



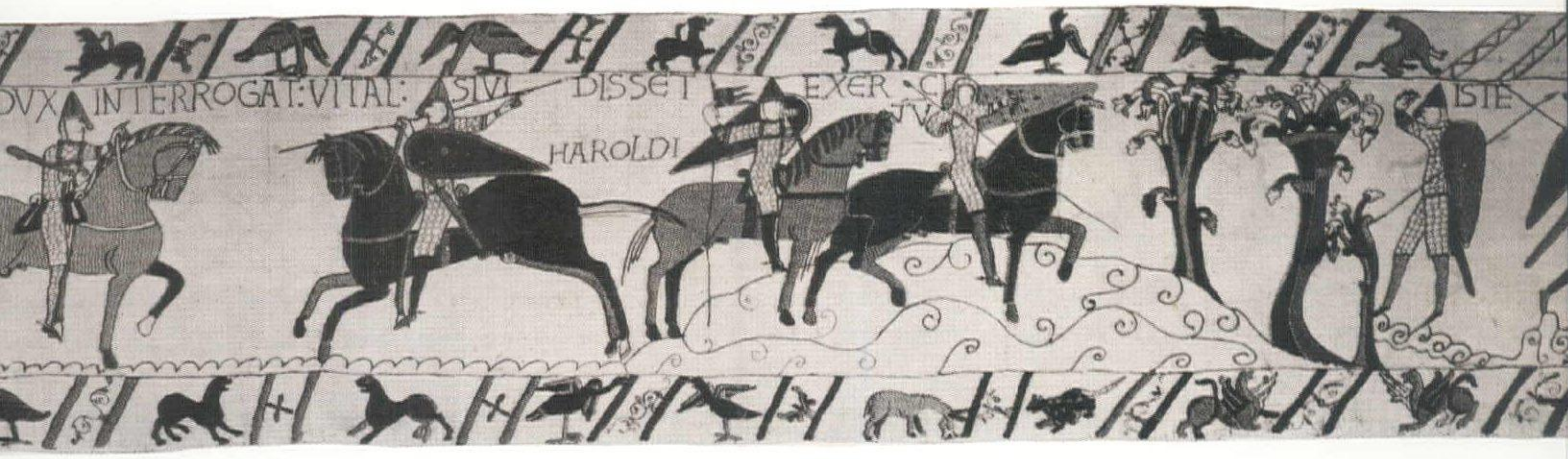
King Harold, on horseback, gets a report from the scout. It was probably discouraging.

William harangues his knights, and they gallop away toward Senlac Hill.



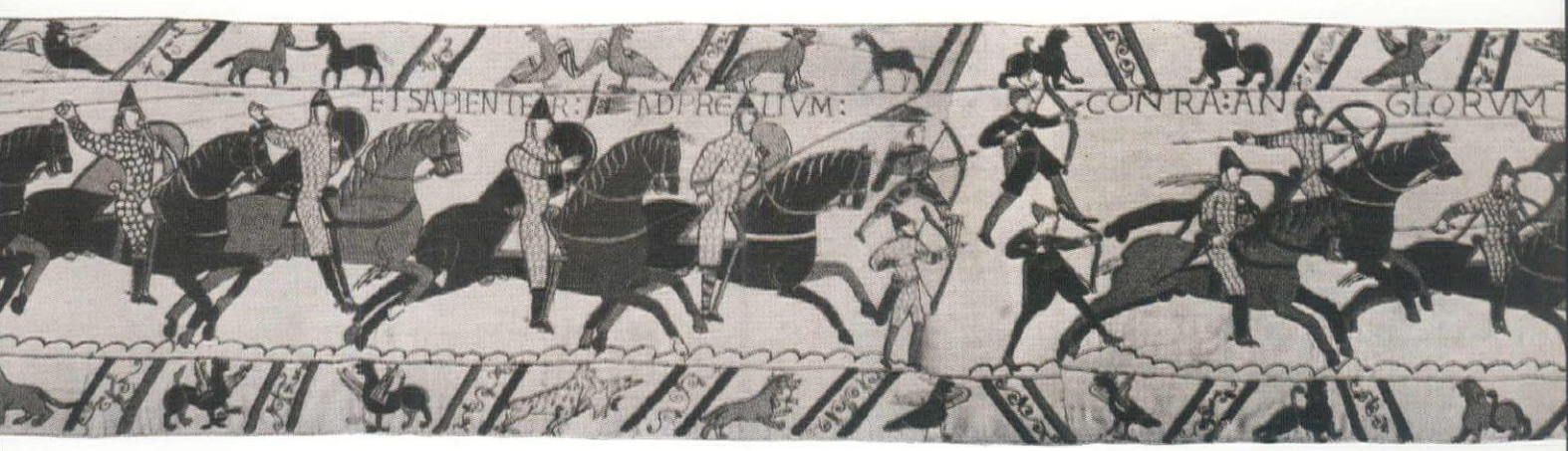
As a woman and child flee, Normans set fire to a house.

The group of buildings probably represents the town of Hastings. To the right an armed knight awaits the arrival of his steed and groom.



William pauses to ask a knight—his name is Vital—if he knows where Harold's army is encamped.

Two Norman reconnaissance men sight an English scout through some very stylized trees.



It is the morning of October 14, 1066. For the rousing outcome, see color foldout.

"A FATAL DAY, A MELANCHOLY HAVOC"

The scenes from the Bayeux Tapestry which are reproduced on the followin pages vividly depict the events of October 14, 1066, or at any rate the No man version of them some twenty years after the fact. No real eyewitne account of the Battle of Hastings exists. The Anglo-Saxon Chronicle briefl notes that when Harold was informed of William's arrival in England, "h gathered together a great host" and came to oppose the invader "at the grey appl tree." Unluckily for Harold, the chronicler continues, "William came upon hi unexpectedly before his army was set in order. Nevertheless, the king fough against William most resolutely . . . and there was great slaughter on both side King Harold was slain, and Leofwine, his brother, and Earl Gurth, his brothe and many good men. The French had possession of the place of slaughter a God granted them because of our nation's sins." A chronicler of the ne generation, William of Malmesbury, gives a fuller report, describing the Englis infantry as armed with battle-axes and shields against an enemy that possessed nc only archers but a formidable cavalry. He relates that the Normans spent a piou night of prayer and confession before the battle, while the English sang and dran the night away. (We are at liberty to doubt this statement, since Harold's me had just completed a forced march from London and would have been too tire to carouse, even if the damp of an English autumn and the darkness of Hasting plain had not been enough to discourage them.)

The battle began in the morning—medieval armies almost never fought at nigh —when William's archers advanced and fired a volley of arrows. His infantry attacked unsuccessfully, and then the cavalry moved up, as is shown in the detai on the opposite pages. (This is the first battle scene of the Bayeux Tapestry, th artist having chosen to omit preliminary movements.) The cavalry charge wa repulsed by the doughty English housecarls. William of Malmesbury says tha arduous fighting continued throughout the day, neither side giving ground, unti the Normans employed the ancient strategem of the feigned retreat. "Througl this device the closed body of the English opened for the purpose of cutting dow the straggling enemy and brought upon itself swift destruction; for the Normans facing about, attacked them thus disordered and compelled them to fly. In thi manner they [the English] met an honorable death . . ."

William of Malmesbury avers that Harold was felled by an arrow which hi his eye, then was finished off by a Norman knight. However, this statement wa probably based on a questionable interpretation of the Bayeux Tapestry. The scene where Harold dies is clearly labeled "Here King Harold dies" ("*Harold rex interfectus est*"), but the pictures are ambiguous. At the left stands a warrior grasping an arrow that seemingly has pierced his head. Next to him is a fallen man being attacked by a cavalier with a sword. This fallen man is probably meant to be Harold, though the point is still debated.

In any event, one brief, bloody conflict and one October day changed the course of English history and won the throne for a new line of kings: "a fatal day," says William of Malmesbury, "a melancholy havoc." William the Conqueror became king of England, and his descendant in the twenty-ninth generation occupies the throne today. The newest edition of *Debrett's Peerage* points out, for the consolation of any Saxon partisans, that Elizabeth II is equally a descendant of Harold. His daughter Gytha, having managed to escape the Normans, wed a prince of Kiev, and one of their direct descendants, Isabella, married Philip III of France. Their granddaughter married Edward II of England in 1308, thus uniting the lines of Harold and William at last.

BRITISH MUSEUM



A page from the chronicle of William of Malmesbury



THE CLASH OF ARMS AT HASTINGS



ENGLISH AND FRENCH FELL TOGETHER IN BATTLE"



"HERE



Norman cavalry is brought up short by the formidable English infantry, which from the shelter of its shield-wall hurls lances, spears, and even a mace. Though the English had few if any archers, one is shown in action at the far right. Corpses, and a fallen bird, litter the lower border. The Bayeux artist shows the armies in identical garb—long shirts of mail with protective leggings, conical helmets with nose guards, and kite-shaped shields.



"HAROLD REX INTERFECTUS EST"



of whom wields a battle-axe against a knight on another varicolored steed. In the center, three horses tumble violently to the ground, and battered corpses spill into the border. On the right a Norman knight drives his stumbling pony up a hillside where a band of Englishmen are ensconced. They wear no chain mail and must therefore be members of the fyrd, or militia. Two of them pitch head over heels down the hill.



Thus reads the legend over this fiercest and most brilliant scene from the tapestry, which may represent the turning point of the fray. Following William's first cavalry charge, his Breton troops feigned a retreat, or perhaps actually did retreat, and were pursued by the English, who were then surrounded and slaughtered. Reading left to right, we see a Norman on a black and yellow horse flanked by several Englishmen, one



At the left is a standing man who has been struck by an arrow. He is sometimes said to be Harold, but the fallen man under attack by a knight is more likely to be he. His death marked the end of the English army. In the next scene the housecarls make a last stand. The tapestry then breaks off, but we can reasonably assume that its missing final episode showed the coronation, on Christmas Day, 1066, of King William I of England.

TEXT CONTINUED FROM PAGE 9

sea when the boats grounded.) Finally the service troops, the carpenters, farriers, cooks, unloading the supplies and equipment. The efficient amphibious operation is a tribute to the planners. And, like other such operations, it was blessed by the general's good luck.

Disembarking, William stumbled and fell. This was an evil omen. But William cried: "By the splendor of God, I here have taken the land in both my hands!" It is a well-beloved story, but kill-joy scholars point out that Julius Caesar, landing in Africa, likewise fell, seized the earth, and exclaimed: "*Teneo te, Africa!*"

William's plan was clear: to seize a strong, defensible beachhead from which he could ravage the countryside, supply his troops, and eventually provoke battle with the enemy under favorable circumstances. For he must fight and conquer, and that soon: time was against him. But Pevensey was too narrow and restricted a base. He therefore moved about ten miles east to Hastings, which in those days formed a kind of peninsula protected on three sides by water. (Possibly he had been aiming for Hastings in the first place.) There he made an entrenched camp and within a day put up his prefabricated fort.

Meanwhile a faithful Sussex thane galloped north, two hundred and fifty miles, to inform Harold of the invasion. The news could not have reached him before October 1 or 2. Harold did not waste a moment. He assembled his housecarls, still battle-sore, and those few archers and militiamen who could be mounted, and rode at top speed to London. It was the second long forced march in a fortnight. On the way he picked up recruits, ordered to follow him on foot. Others joined him in London.

Harold was in a rage, *furibundus*. He was provoked by news that William was systematically ravaging and burning the south coast. (The Bayeux Tapestry shows soldiers firing a house while a mother and child escape.) Not waiting for the fyrd to assemble from all England, he marched out of London on October 11. He took the highway to Rochester, then turned south on the old Roman way through the dense forest of the Weald to Hastings. His army, mostly dismounted, covered nineteen miles a day. This is amazing speed, when one considers the weight of equipment, the ruggedness of the road, the many swamps, thickets, and sharp little hills, and the difficulties of supply in the barely inhabited forest country.

Harold's army, of perhaps nine thousand men, was composed of the housecarls and a contingent of the fyrd. According to the authoritative study of Lieutenant Colonel Charles H. Lemmon, President of the Battle and District Historical Society,* "the housecarls, a royal bodyguard instituted by Cnut, were professional men-at-arms who were dressed in short, close-fitting leather jerkins, on which iron rings were sewn, trousers bound with thongs, and sandals. They wore their hair long, and their heads were covered by steel caps with nasal pieces and long leather flaps which fell over their shoulders. They carried pointed shields made of lime wood, which measured about 36 inches by 15 inches. Their principal weapon was the long Danish battle-axe, with which a horse and rider could be cut down at a blow; but the axemen had to be supported by swordsmen and javelin throwers, and they may have fought in combat groups like the one shown on the Bayeux Tapestry, as they were noted for their perfect drill in action. After supplying a bodyguard for the king, their chief function in battle was to stiffen the ranks of the fyrd."

The fyrd, the national levy, was composed of peasants, ill trained if trained at all. They wore leather jerkins and caps and were armed with farm tools, such as scythes and pitchforks, and miscellaneous spears, short axes, and slings. Very few were archers. But at least they had Saxon courage and the Englishman's hatred of the invader.

On the evening of October 13 Harold emerged from the forest and encamped on the edge of open farm land, recently harvested. His position was on Caldbec Hill, in the present village of Battle, seven miles from Hastings shore and perhaps three or four from William's camp. His men were dog-tired and probably hungry.

William's scouts promptly informed him of Harold's arrival. He had an immediate choice to make. He could await Harold's move against his entrenched camp or he could attack. If he waited Harold might also wait, until overwhelming reinforcements should arrive. He chose to attack while the English were still disorganized. He moved north at dawn on the fourteenth. He found the English deploying in a very strong position just below the summit of a small hill, with their flanks protected by marshy streams and with open fields before them.

The visitor to Battle Abbey today stands among the Saxon ghosts on a southward-looking terrace, while the scholarly guide explains the action. The ground drops away, not sharply but a little more than gently, enough to wind an attacker wearing a thirty-pound suit of chain mail and carrying weapons. The English formed a "shield-wall," with the housecarls in the front line, the fyrd behind.

Halfway down the slope William deployed his army, with the archers foremost, the cavalry next, the infantry in the rear. The banner blessed by the pope waved overhead. William, wearing a bag of relics at his throat, rode to and fro giving final orders.

The minstrel Taillefer, the eternal exhibitionist, gained William's permission to strike the first blow. He rode in front of the Normans chanting a song about Roland, the legendary hero, tossed his sword high in the air, and caught it by the hilt. He then galloped straight at the enemy, and with spear under arm impaled an Englishman; he was chopped down by battle axes.

Now the Norman archers moved forward to their effective range—about a hundred yards—and let loose a volley. But they were shooting uphill against men crouching behind their shields. The chief product of the attack

* *The Norman Conquest*, Eyre and Spottiswoode, London, 1966

was a chorus of gibes and taunts. The archers' arrows were soon exhausted. They depended for replenishment on picking up the opponents' spent shafts, and of these there were few.

The next stage is not clear. It may have been a Norman cavalry charge. Not many people today, outside of the movies, have taken part in a cavalry charge. But the present writer, a trooper on the Mexican border in 1916, can testify that there is no greater thrill in life than to gallop knee to knee against even a simulated foe, and that there is nothing more terrifying than to stand firm while a wall of maddened horses charges one down. But the maddest horses will refuse before a row of planted pikes; and a proper cavalry charge demands long training of men and particularly of horses. This training William's army did not have. It seems more likely that his knights skirmished along the line, throwing javelins and looking for weaknesses. A horseman might spear a trembling Saxon, but before he could withdraw he and his mount were cut down by the mighty two-handed axes.

The decisive clash was clearly of infantry against infantry. The attackers had the advantage of armor, being mostly clad in linked chain mail, and probably they were more agile than the English in thrusting with their long swords. But they were fighting uphill; and the English had the advantage of reach with their five-foot axes, which could sever a horse's neck or cleave a helmet or a mailed shoulder, driving the chain-mail links into the wound.

The battle resolved itself, then, into a series of hand-to-hand engagements. At length the Breton contingent on William's left wavered and fell back. The English broke ranks and started in pursuit. The rumor ran among the Normans that William was killed. He doffed his helmet and rode to and fro reassuring his men, and sent his mounted knights to ride down and pick off the scattered English one by one.

A long lull followed, while both armies re-formed. William launched his cavalry in full force against the English position. They were met by a storm of stones, javelins, and Saxon throwing axes. The melee was long, fierce, and bloody. Harold's two brothers were killed, but the English line held.

According to the Norman chroniclers, William now practiced one of the oldest tricks in the military bag, the "Feigned Retreat." But this trick is also one of the most difficult; it requires perfect battlefield control and timing and well-trained troops, or else the feigned retreat is very likely to turn into a real one. Modern military men are inclined to think that the Norman cavalry in the center gave way, and that the English broke ranks to pursue them. The temptation was great; the field was covered with dead Norman knights, while the wounded were crawling or limping away. Each wore an expensive suit of chain mail, the most precious of loot. The Bayeux Tapestry shows many scenes of survivors pulling coats of mail over the heads of dead men, in some cases apparently first removing the head.

William seized his opportunity. He ordered his cavalry on left and right to close in on the pursuers. In the open the horsemen were easily able to run down and destroy the foot soldiers. (One notes that there is no mention anywhere of prisoners. Nor, for that matter, of surgeons, medical corpsmen, stretcher-bearers. The wounded were left to die or—to die.)

William now ordered a direct attack in full strength on the English position. He bade his archers, who were now re-equipped, to shoot high in order to catch the enemy with descending shafts. It is commonly said that Harold was thus wounded by an arrow in the eye, but this may be a misinterpretation of a scene in the tapestry. The Normans, massed and fierce for victory, broke through the English defense. The chronicler says that the dead stood so close that they had hardly room to fall. Panicking Englishmen began to run for the shelter of the forest. Harold was struck down by Norman knights. On the exact spot where he fell William decreed that the altar of a great commemorative church, Battle Abbey, should stand.

The Normans had won the battle and, as it turned out, the war. Harold and all his brothers were dead; there was no other serious claimant, besides William, for the English crown. From now on it was all mopping up. William moved cautiously, consolidating his hold on the southeast, striking terror by his spoliation, and also enduring a long attack of dysentery. He circled about London, entered the city, and on Christmas Day, 1066, was crowned king of the English in Westminster Abbey.

The day of Hastings, October 14, 1066, was one of the decisive days of all history. The battle itself was nip and tuck; the shift of a few elements, a gift of luck, could have given the victory to the Anglo-Saxons.

If Harold had won at Hastings—and had survived—William would have had no choice but to renounce his adventure. He could not have prevailed against the aroused masses of the island, led by their determined king. He could not possibly have raised reinforcements in France. There is little likelihood that anyone would have attempted an invasion of England during the next millennium—at least by water. England would have strengthened its bonds with Scandinavia while remaining distrustful of the western Continent—even more distrustful than is the present case. The native Anglo-Saxon culture, art, and literature would have developed in unimaginable ways. I should be writing these words, and you would be reading them, not in English but in Anglo-Saxon, and William the Conqueror would be dimly known in history only as William the Bastard.

Morris Bishop, a frequent contributor to Horizon, *is now at work on a full-scale study of the Middle Ages.*

The peace of Senlac Hill is nowadays unbroken by any but tourists. Battle Abbey, behind the tree, marks the spot where Harold





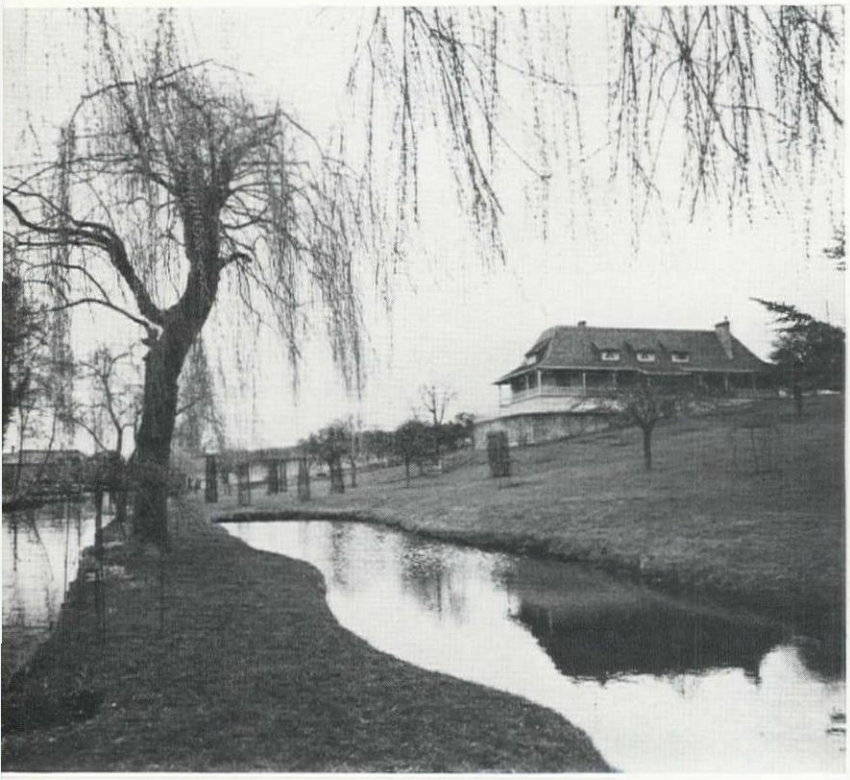
Claude's portrait on Michel's table

In a snub to the mighty Louvre, the almost unknown collection of the grand old man of impressionism was left to an equally unknown museum

MONET'S REVENGE

By PIERRE SCHNEIDER

Michel Monet's rich legacy of art had been casually, not to say carelessly, stacked about his house (at left and below) since 1926. His own tastes ran to hunting trophies and garish African souvenirs. The inheritors (opposite) had to scramble from attic to cellar, and even under the beds, to find the ninety-two canvases that have now become the property of the nation.



Michel's house at Sorel-Moussel in Normandy



Inside: trophies, souvenirs, and a Berthe Morisot

An eighty-seven-year-old-man, killed in a crash near Rouen last winter, while driving home after a visit to his mother's tomb: at best a *fait divers* in our drama-laden age. Yet a month later the event made headlines around the world, for the old man was Michel Monet—son and sole heir of Claude Monet, one of the first and greatest impressionists—and he had left his entire estate to the Académie des Beaux-Arts.

When Michel Monet's solicitor invited representatives of the Institut de France (of which the Académie is a part) to the house of the deceased at Sorel-Moussel in Normandy, the officials knew they were going to get something, but the actual wealth of the legacy far exceeded their expectations. Here, stacked in the cellar, piled up in the attic, even shoved under beds, were ninety-two works by Jongkind, Boudin, Signac, Renoir, Caillebotte, Berthe Morisot, Delacroix, and Monet himself. Forty-two of them were his own canvases.

Many of these works had clearly carried an emotional meaning for Claude Monet. Jongkind and Boudin had been his masters; Renoir, Morisot, Caillebotte, were his friends; he worshiped Delacroix; and Signac was the most enthusiastic of his admirers of the younger generation. For sentimental reasons Monet had kept his portraits of his sons and the enchanting *Women on a Beach* (page 30), featuring his first wife, Camille. Finally, there were a number of canvases from the later part of Monet's career when, having become successful and rich, he no longer needed to sell and, in fact, became reluctant to do so. A conservative estimate claimed the whole lot to be worth a total of five and a half million dollars.

PHOTOGRAPHS BY RAY WILSON; VIP, PARIS



The inventory begins at Sorel-Moussel

The Institut people had still another surprise coming. Michel Monet had inherited not only his father's paintings (and money) but also his estate at Giverny, where the artist lived for forty-three years and which he had, with the help of a small army of gardeners, turned into a luxuriant paradise. This garden, with its pond, wisteria, Japanese bridge, and, above all, water lilies, increasingly became his subject matter. The post-mortem inventory at Giverny now disclosed forty-six additional canvases by Monet, described as studies, executed in those final years. These works—estimated at about six million dollars—had been lying at Giverny, practically unguarded, ever since Monet's death in 1926.

That these masterpieces should not have tempted burglars is less surprising than it seems: for a quarter of a century after Monet's death, they did not even tempt connoisseurs Monet's retirement to Giverny coincided with the emergence of a "last manner" which specialists of impressionism considered a decline. Indeed, the bold freedom and radical power of the "*Nymphéas*," as the water-lily paintings are called has often been attributed—Michel Monet's own opinion—to failing eyesight. Fauvism, cubism, surrealism, and geometric abstraction further contributed to plunge Monet into oblivion After World War I, France's grand old statesman, Clémenceau, who commissioned the climactic *Nymphéas* series for the Orangerie and forced them upon the state, was practically his sole defender. Today, the Orangerie is as neglected as it was fifty years ago. Nonetheless, Monet's late work has met with growing appreciation since the 1950's, largely because



Michel by his father



Michel grown up, in a safari hat

Although Michel Monet cared little for his father's paintings and sold one whenever he needed money, he treasured family memorabilia like the four portraits of himself as child (one is at the far left) and the beach scene below, for which his mother Camille posed shortly after her marriage. She died in 1878, while he was still a baby. The painting was done before Claude Monet had fully developed his familiar "impressionist" style, which reached a climax in the great Nymphéas *series (opposite) of his last years*



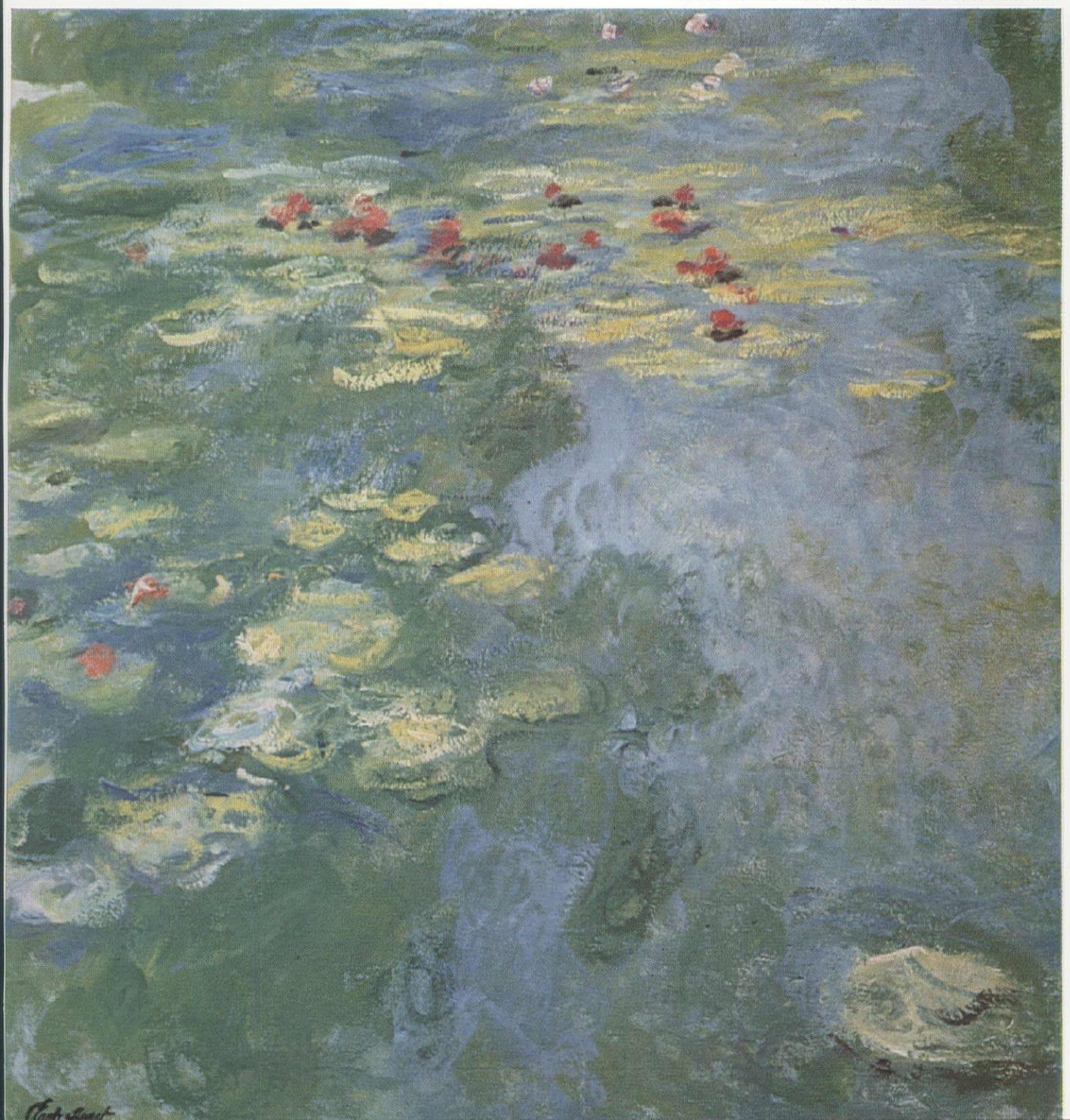
Mme Monet and her cousin on the beach at Trouville

the rise of postwar nongeometric abstraction had opened people's eyes to Monet's "abstract impressionism." A painting of *Nymphéas*, worth about a thousand dollars before 1950, was valued at twelve thousand in 1951 and purchased in 1965 by London's National Gallery for $320,000.

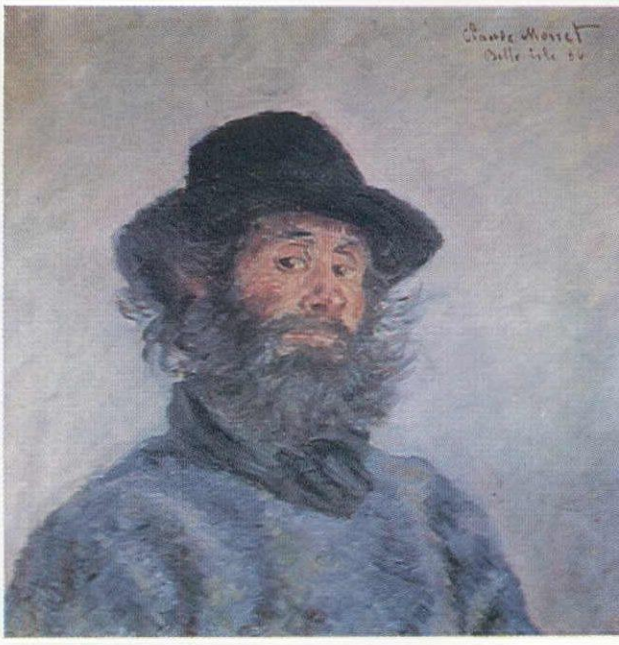
Michel Monet left this artistic treasure to France, but not to the Louvre. His will—the twelfth he had drawn up—made the Institut the legatee on condition that it make room for the one hundred and thirty-eight works in the Musée Marmottan, one of the four museums which it administrates. And therein lies the joke, for the Musée Marmottan is a fairly small bourgeois mansion in Auteuil, crammed with bric-a-brac from the sixteenth to the nineteenth century. Quite incongruously, it boasts an impressionist collection already containing six superb Monets, but it is only open on weekends (except in the summer) and few are its visitors. To show the new Monet ensemble it would have to build a new wing.

Why did Michel Monet make this weird choice? In deference to his father's resentment against the Louvre, it has been alleged. True, the national museums did their best to refuse the extraordinary impressionist collection bequeathed by Caillebotte in 1893 and at last—reluctantly—accepted only part of it (eight out of sixteen Monet canvases). But the Beaux-Arts was no less hostile. Indeed, one of its leading members, the academic painter Gérôme, threatened to resign from the Institut "if the State were to accept such garbage." It is more likely that Michel Monet remembered that, in 1937, the Curator of the Louvre suggested the removal of the *Nym-*

One of the late water-lily paintings in the collection



Claude Monet painted the hirsute Poli (right) in 1886, during a late-summer visit to Belle-Ile-en-Mer off the south coast of Brittany. It is one of the fairly rare portraits in his large body of work. There is no date on his utterly simple but poetic painting of a fishing boat at sunset (below). During the inventory at Sorel-Moussel, it was valued at about $32,500—though no one knows what it would bring on the open market.



Monet's portrait of Poli, a fisherman



Also by Monet: a fishing boat at sunset

phéas from the Orangerie to the Musée d'Art Moderne. Into the early fifties this disparaging proposal was brought up again and again. At Marmottan, meanwhile, the Monets slept—but at least they slept in peace.

Michel Monet's eccentric will was in keeping with his character. He had inherited his father's gruff, individualistic disposition. He had two passions in life: fast cars and Africa. In the 1930's he had gone on several trips of exploration to that continent, but their contribution to science may be doubted: Michel Monet was all but illiterate. Claude Monet, who himself left school at a very tender age, had given little thought to his son's education.

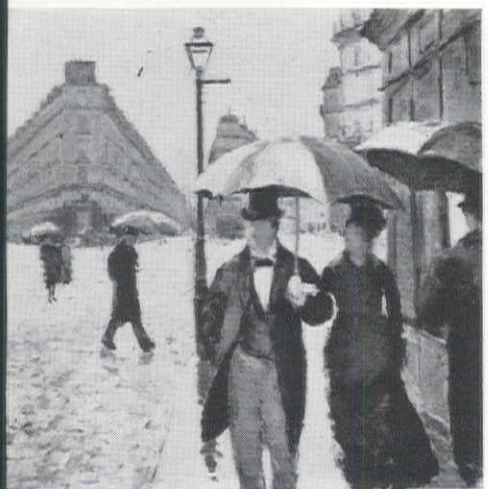
At Sorel-Moussel Michel Monet led a misanthropic existence, surrounded by his hot rods, a monkey or two, and his "museum" of African tusks and trophies. He apparently cared little about his father's paintings. Whenever in need of money —for he never worked—he would sell one: at the outset, the collection may well have been twice its present size.

One may wonder whether Marmottan *will* get it, even in its present state. The bequest must first be approved by the Ministry of Education, which controls the Institut and will be only too glad to chalk up a triumph over its rival, Malraux's Ministry of Culture. But the final authorization will have to come from the Conseil d'Etat, the supreme arbiter in administrative matters. A small war between ministries may thus be Monet's ultimate revenge on officialdom. Meanwhile, the paintings will continue to sleep quietly for one, two, or three years. Only one difference: now they are guarded.



Claude and Camille Monet, by Renoir

Besides his father's paintings, Michel Monet had valuable works by his father's friends. Among the four Renoirs were the two above, portraits of Michel's parents which he had stuck in a single frame. There were some oils by Caillebotte (below), and a few by Signac (right), for whom water was an inspiration as it was for Claude (opposite).



Caillebotte's The Street



Paul Signac's Departure of the Fishing Fleet



CASANOVA IN ENGLAND

It was the only place where a woman ever said "No" to him—and the experience unsettled him for the rest of his life

By PETER QUENNELL

Early in the summer of 1763 Jacques, or Giacomo, Casanova, who sometimes, quite unwarrantably, styled himself the Chevalier de Seingalt, a native of Venice but also a citizen of Europe, well known to the secret police of half a dozen different countries, decided he would visit England. Perhaps, after his recent successful exploitation of an elderly crackbrained French noblewoman, the Marquise d'Urfé, which may have brought him as much as a million francs, he preferred temporarily to leave Paris. Otherwise his motives were honest enough: he intended to promote in England, with the collaboration of the British government, an officially recognized public lottery of the kind that he had already run in France. And then, there was his natural restlessness. Like Ulysses, he felt that it was his destiny to explore "the cities and the minds of men," while simultaneously he pursued his researches into the passions and the hearts of women.

At the time he was thirty-eight years old, a tall, swart, strongly built personage with bright dark eyes and an impressive beaked nose. During his youth, that collector of handsome men, Frederick the Great, had commented warmly on his fine appearance; and he was still full of energy, wit, and charm—or so it seemed until he reached England. Then a sudden and disturbing change took place. But before we follow him across the Channel, something must be said about his character, more particularly about his true character in contrast to his notorious legend. For "Casanova" is one of the runaway names that have become dissociated from their individual owner and indissolubly attached to a certain type of human conduct. There can be no doubt that Casanova earned his reputation as the indefatigable seducer of women, but his interests were far less specialized, and in some aspects far more altruistic, than those of the ordinary professional rake. He was devoted to learning, versed in literature, and an amateur mathematician and scientist; between 1752 and 1798 he published more than a score of literary works, including a number of unsigned articles, very often on highly recondite topics. Among his chief English friends was Dr. Maty, a librarian in the British Museum, and Maty introduced him to Samuel Johnson, with whom Casanova claimed to have discussed some absorbing etymological problems. His thirst for information was always unbounded, and it remained equally keen throughout his whole existence—whether he was studying the opposite sex, hobnobbing with famous literary men, or observing the habits and customs of an unfamiliar capital.

Yet, although it did not monopolize his whole attention, love, admittedly, was a subject to which he gave special thought, and the maxims that stock his autobiography would provide the contents of a small volume. As a passport to amorous success, he recommends delicate, unremitting care: ". . . I knew that there is not a woman in the world who can resist the assiduous care and little attentions of a man who has determined he will win her love"; while, on a more scabrous level, he notes that very young women can often be seduced if a sister or a close friend should attend the seduction as an eyewitness. But conquest alone did not satisfy him: love-making must bring into play all his powers of appreciation. In London he refused to entertain a beautiful and fashionable courtesan, Kitty Fisher, because he could not speak English and she had no foreign languages: "Accustomed to love with all my senses, I could not abandon myself to love unless I employed my sense of hearing."

Casanova was a greedily sensual man. But he was an adventurer who thought and felt, and whose ability to think and feel was intimately connected with even his grossest pleasures. Although he was superstitious, he had escaped a sense of sin; and though occasionally cruel, when it did not interfere with his pursuit of amusement he was very often warmhearted. He possessed, moreover, an extremely valuable gift—by merely desiring to do so, he could immediately fall in love. Not all his affairs were genuine love affairs, but a surprisingly large number of his passing escapades would appear to have bred that vital spark. If he were loved, he usually loved in return, until the inevitable moment when he knew that it was time to say good-bye. He was neither intentionally destructive, nor deliberately self-destructive. He was apt to see his role as that of a genial Priapus in the closed garden of eighteenth-century society, dispensing joy and, with it, enlightenment as he taught the women he encountered to understand their own needs.



Arrival in London

Casanova began to compose his autobiography about 1789, during the last and saddest period of his life, at the Castle of Dux in Bohemia where he had been appointed honorary librarian by the good-natured owner, Count Waldstein; it is both a record and a testament—the story of the adventures he had lived through and a summing up of his private beliefs and discoveries. This extraordinary and endlessly fascinating book was still unfinished on his death; and, having remained in manuscript for nearly thirty years, it was at length presented to the reading public by the Leipzig firm of Brockhaus. But the German publisher did not choose to print it exactly as it had been written, and enlisted the editorial services of a Professor Jean Laforgue. resident teacher of French at a college in Dresden. Laforgue was a remarkably unscrupulous editor; he disliked Casanova's French style, which is lively and energetic, if often somewhat incorrect, and in preparing the story for the press—the final volume of the series appeared in 1838—he allowed himself the widest latitude.

That Laforgue had taken serious liberties with Casanova's text had long been known to every student of the *Memoirs;* but no disinterested reader had been permitted to examine the manuscript, and one could not tell just how ruthlessly or how sympathetically the professor had performed his function. For a time it was rumored that the precious papers had been forever lost—perhaps burned in an Allied fire raid, possibly abandoned and destroyed during the Russian invasion of East Germany. Happily, this proved untrue. In 1964, from the archives of its first publishers, who had since moved their offices to West Germany, Casanova's holograph emerged triumphant; the authentic *Memoirs* have now been published by Plon in France, and Propyläen Verlag of Berlin has begun to issue a scholarly German translation.*

The result is astonishing. Laforgue, we discover, did not simply edit and amend; he rewrote and expanded whole episodes. Wherever the reader casts his eye, there are traces of that ponderous, disfiguring touch. It was formerly believed that besides editing, Laforgue had also bowdlerized Casanova's narrative. On the contrary, he proves to have enlarged and embellished some of the more obviously erotic scenes. The author's original accounts of his amatory experiences are invariably concise and vivid; the editor deliberately touched them up, adding here a word or two, and there a line, so as to invest the author's direct descriptions with a specious air of Gallic naughtiness. Laforgue's sense of decorum, however, would occasionally overcome his taste for license; and when Casanova, who was attracted to very young girls and not averse to the idea of incest, confesses that he had once thought of playing the Humbert Humbert with Sophie, a pretty little girl he believed to be his daughter, Laforgue takes a firm censorious stand and cuts out the reference.

* The present writer was privileged to contribute an introductory essay to the first two volumes. From that introduction, which was translated into German, he has drawn some of the material incorporated in this study. The Propyläen Verlag edition of Casanova's complete text will eventually run to twelve volumes.

Seldom has a literary masterpiece received more brutal handling. Today, with the original text before us, we can see the superiority of Casanova's brisk Italianate French to Laforgue's pedestrian but smooth-flowing prose. The memoirist was an accomplished storyteller, and his narrative gifts are especially apparent in the picture he draws of his disastrous visit to England. Everything about this strange country either puzzled or annoyed him. The island named England, he wrote, had a color that was all its own; "the waters of the Thames have a different savour . . . Cattle, fish, whatever one eats, taste differently from what we eat abroad; horses are of a peculiar breed . . . and men have a distinctive character." England, he concluded, was a sea full of sandbanks, and those who sailed it should remember to be wary. On that wild and dangerous sea he was somehow taken off his guard and swept into an amatory crisis through which he floundered like an inexperienced youth.

The beginning of September, 1763, had marked a climacteric in Casanova's history. Never again was he to be quite the same man. As he reviewed those stormy, frustrating months, he felt that on a certain calamitous autumn day, he had in fact begun to perish: "It was on that fatal day . . . that I began to die and ceased to live." Looking back, he saw a process of gradual decline: the reverses he had undergone in London—"which ended the first chapter of my life"—had led directly, through his final period in Venice where he had earned a meager pittance as a government spy, to the miserable seclusion he now endured at Dux, scribbling and yawning and regretting his vanished youth, amid Count Waldstein's serried folios. At Dux he was entering the third chapter, which could only end with death. "The comedy will then have run its course. . . . If the audience should chance to hiss, I very much hope that there will be nobody to bring me the news."

Meanwhile he could neither excuse his failure nor find an explanation of its inward causes. Had he himself, conceivably, *willed* his downfall? Love was a notorious source of folly, and he was obliged to confess that he had loved beyond all reason. A modern biographer is equally mystified. Casanova was still vigorous, resourceful, and well provided with money; he possessed an abounding personal charm and had had a lengthy experience in the management of women. On English soil, however, none of these assets could save him from humiliation. Yet the early stages of his visit showed Casanova in his most aggressive mood. Although the lottery scheme never materialized, owing to the unexpected removal of his chief supporter, he soon hired an expensive furnished



Chess with Pauline

house and, since English tavern fare was rich but unappetizing, engaged an admirable French cook. He spent his money in a judiciously prodigal manner. His Pall Mall residence alone cost him more than twenty pounds a week.

From this base Casanova proceeded to conduct three major amatory campaigns of which the first and third

were brilliantly successful, but the second ended in an ignominious rout. Each shows him in a different aspect. Thus, his brief liaison with the aristocratic Portuguese girl whom he calls Pauline X———o, but who is otherwise unidentifiable, reveals him as a tender, thoughtful, and imaginative lover, while his treatment of "the Hanoverian women"—an impoverished widow and her five daughters, all of whom he presently enjoyed—displays him at his least attractive. He played on their fears, exploited their poverty, and swept aside their forlorn pretensions to virtue.

Between these episodes—one romantic and sentimental, the other harshly cynical—Casanova inserts a tragi-comic account of his association with La Charpillon and her family. At first sight there was nothing to distinguish the seventeen-year-old Marianne Charpillon from a host of young women he had met and conquered. Her mother and grandmother, descendants of an honest Swiss pastor, had both been minor demimondaines, listed in the secret archives of the French police; and, while they were living abroad, Casanova had already met them. They had since left Paris and settled down at a modest house in Denmark Street, Soho (nowadays London's tin-pan alley), whither their confederates, a gang of petty cardsharps, lured the victims they meant to pluck. The Charpillons had many acquaintances among the alien population of the city, and it was M. Malingan, a Flemish soldier of fortune, who presented the Italian tourist to Madame Charpillon and her daughter.



La Charpillon

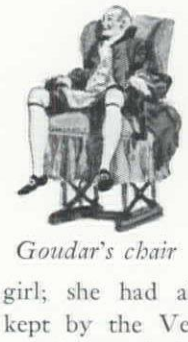
Marianne Charpillon at once aroused his desire, which presently merged into a much deeper feeling, for not only was she witty and seductive but to a sharp mind and engaging manners she added conspicuous physical attractions. She was, indeed, he thought, a great beauty, with her light chestnut hair, azure eyes, dazzlingly white skin, small but perfectly formed breasts, long dimpled hands, and tiny feet. "Her physiognomy [he wrote], which was gentle and candid-looking, suggested a soul notable for delicacy of sentiment"; and she possessed, moreover, that air of distinction which is usually associated with patrician birth. Here Nature lied, says Casanova bitterly. She was neither delicate nor well-bred: "This girl had conceived the plan of making me wretched even before she had really got to know me; and, what is more, she told me so."

The story of Casanova's sufferings is a fantastic record of folly and deceit—doubly bizarre because he had fallen in love and embarked on the episode with so few illusions. He knew the family and had had an opportunity of observing at least one of their associates, the Frenchman Ange Goudar, whom he describes as a pimp and a cardsharp, a police spy and a perjured witness. Considering his wide experience of life, and the knowledge it had brought him of adventurers and tricksters—he was acquainted, he once declared, with every vagrant adventurer on earth—Casanova, in a more lucid, less impassioned frame of mind, might very well have come off scot-free. But he did not allow for La Charpillon's natural talents—her knack of both exploiting his passions and discovering his weakest points, the wasplike gift she possessed of plunging her sting into some unprotected nerve center, then half resuscitating her almost paralyzed victim only to expose him to fresh cruelties.



Driven to violence

Why was Casanova the victim she chose? That is a question we cannot fully answer. He had money; he was uncommonly generous; he could afford, and was prepared to pay, her price. La Charpillon was not an innocent girl; she had already been kept by the Venetian envoy and, no doubt, by several other men. She had much to gain and little to lose, if she granted Casanova what he sought, while the course of action she preferred to pursue involved her in many real dangers. Admitted to her bed but refused her embraces, her suitor grew violent. On one occasion he bruised her severely and tore the chemise that she was wearing "right down to the small of her back." Nothing could shake her infernal obstinacy. "Cruel night, desolating night, during which I appealed to the monster in every tone I could command: gentleness, anger, reason, remonstrances, threats, rage, despair, petitions, tears, ignominy and appalling insults. For three whole hours she resisted me; and, all that time, she never breathed a word . . ." Finally, bewildered, stupefied, his brain on fire, Casanova dressed in the dark and wandered home.



Goudar's chair



Out with the barber

Soon he felt that he must be going mad: "I think the natural outcome of a long period of self-contempt is a state of despair that leads to suicide." A professed libertine, he had been untrue to his creed, to the duty that he owed himself. He had shown irresolution, ridiculous timidity: "That morning [he records] in a timid voice I asked her if she meant to spend the night with me . . ." He had allowed his senses to inflame his heart, and his heart to rule his head. Meanwhile, Goudar, the expert pimp, was hurrying busily to and fro. He professed to sympathize with Casanova's misfortunes, and at one point suggested that his friend should overcome Charpillon's resistance by persuading her to sit down in a specially contrived chair, an ingenious piece of mechanism that would thereupon imprison her limbs and leave her at her lover's mercy.

Such a chair he thoughtfully offered to purchase. Casanova refused. Rape, he knew, was a hanging crime in England, and he still hoped that persuasion might succeed. There he was wrong: La Charpillon's numerous triumphs seemed merely to increase her malice. Arriving unexpectedly at the house in Denmark Street, he found his idol and a handsome young barber's assistant stretched out on a sofa and enjoyably "making the beast

with two backs"—the expressive phrase Casanova had borrowed from Shakespeare. He then set to and thrashed his rival, broke every chair in the sitting room, and demolished a looking glass and a valuable porcelain service, both his own presents. La Charpillon escaped into the street, and next day he heard that she was seriously ill.

This was followed shortly by the news that she was expected to die within an hour's time. "I felt, at that moment, as it were an icy hand crushing my heart"; and he promptly determined to commit suicide, loaded his pockets with lead shot, and trudged off doggedly toward the river. "A human being," he notes, "very easily goes mad"; but his mind had always included a hidden germ of superstition, and he was convinced that "in irrecoverably decisive actions we are only masters of ourselves up to a certain point." Halfway across Westminster Bridge, whom should he meet but Mr. Agar, a rich and good-natured young Englishman capable of providing just the diversion that he needed! They drank together at a



Palliative debauch

tavern with a pair of friendly girls, and although Casanova found that he had not the slightest appetite for roast beef and pudding, or, indeed, for making love, the debauch that ensued had a temporarily palliative effect. That same night, however, they visited Ranelagh Gardens, where, on the dance floor, he caught sight of La Charpillon, performing with her usual elegance; he broke into a cold



Ridiculous expedient

sweat, and a convulsive tremor shook his arms.

Now that he had decided against death, Casanova slowly and painfully recovered, but his tribulations were not yet at an end. There was a wild flurry of attacks and counterattacks. On his plea, La Charpillon's mother and aunts were arrested as swindlers and consigned to jail, but then he himself was haled before the blind magistrate Sir John Fielding, half brother of the novelist Henry Fielding, and accused of intending to do the girl bodily harm. Without much difficulty he managed to regain his freedom, but his thirst for revenge was still unsatisfied. He devised the ridiculous expedient of purchasing a young parrot, which he taught to cry, "Miss Charpillon is even more of a harlot than her mother!" and then disposed of in the public market, to repeat its message to the world at large. It was an absurdly undignified stratagem, and did not help him to forget that his failure to seduce La Charpillon had cost him at least a thousand pounds. Although his conquest of "the Hanoverian women" did something to console his self-esteem, that, too, was a decidedly expensive affair, and after nine months spent in England, he noticed that he was running short of money. At this unhappy juncture he negotiated a worthless bill of exchange, which he had accepted against a gambling debt, with an unsuspicious city banker.

PORTRAIT OF CASANOVA COURTESY ARMANDO PREZIOSI, BOLOGNA; ILLUSTRATIONS ARE BY PHILIPPE LEDOUX, FROM CASANOVA'S *Memoirs* PRINTED BY DRAEGER, PARIS, AND DISTRIBUTED BY EDITIONS EPIC

If found out and prosecuted, he was in danger of being hanged. Casanova had not escaped from "the Leads," most dreaded of Venetian prisons, to breathe his last on Tyburn Tree; and, leaving his shirts behind—they were immediately appropriated by his trusted Negro servant—he packed his trunks and made a bolt for Paris.

Clearly, it was time to cut his losses: he had already had enough of England, and had found the spectacle of London life more instructive than amusing. The English, he announced, were a rough, unruly race; the boisterous urban mob delighted in tormenting foreigners, particularly those who were expensively attired and wore Parisian bagwigs. Even the newspapers took outrageous liberties: "the freedom of the press leads to remarkable abuses." As for English merchants, at the Royal Exchange, where he often did business, a man was known by the size of his income, not by his name or his reputation for honesty. Altogether, the drama that had brought to an end the first chapter of his life history had had a somewhat ominous and lugubrious background. Like William Hickey, another daring rake and accomplished self-portraitist, Casanova had inherited a prodigious memory, nowadays known as the gift of "total recall"—and London he remembered with unusually poignant feelings. The year 1763 had been a watershed in his existence. From that watershed he had slowly descended into the deserts of a lonely, neglected old age.

The library at Dux, he saw, was his final refuge, but to admit it must have cost him dear. He did not enjoy being a poor librarian living on a rich man's bounty. His host, Count Waldstein, was kind and hospitable, yet he often seemed a trifle negligent. The Count's servants were lazy and inattentive; Casanova grew tyrannical and peevish. "There was not a day [wrote the Prince de Ligne] in which, whether for his coffee, his milk, the plate of macaroni he demanded, there was not a quarrel. . . . dogs had barked during the night; an unexpected number of guests had forced him to eat at a side table. . . . The priest had annoyed him by trying to convert him. The Count had not been the first to greet him with a good morning. . . . He had become angry; they had laughed. He had gesticulated declaiming Italian verses; they had laughed.



Farewell to London

He had made, on entering a room, the bow taught him by Marcel, the famous dancing master, sixty years before; they had laughed. . . . He had dressed up with his white plume, his suit of gold-embroidered silk, his waistcoat of black velvet, and his garters of rhinestone buckles on his silk stockings; they had laughed. . . ." All these humiliations could ultimately be traced back to the supreme humiliation he had undergone during the year 1763. The vindictive laughter of La Charpillon, adorable, abominable, unforgettable girl, still resounded in his septuagenarian ears.

Peter Quennell is co-editor of History Today. *His most recent article for* Horizon *was "Magpie's Nest in a London Mansion," November, 1963.*

FOUR SCORE AND SEVEN HOURS AGO...

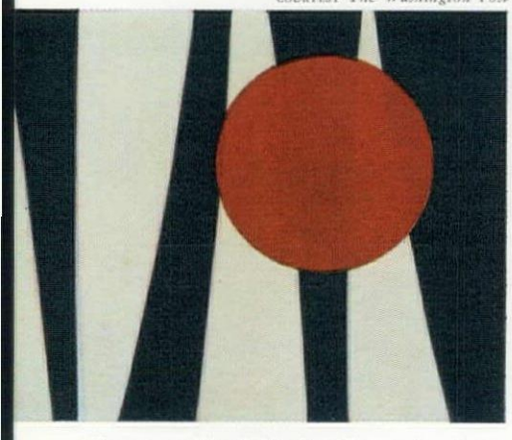
The recent proliferation of nations has aggravated the problem of identifying their flags, much less remembering their political dispositions. It would all be a lot simpler if some of these new nations had adopted as their ensign one of William Walton's witty geometrical abstractions below—which, despite his vigorous disclaimer, bring to mind not-so-abstract nations. First shown at Washington's Corcoran Gallery of Art in December, 1964, the paintings were well received by public and critics alike, with the possible exception, that is, of the woman who accosted the artist on the street and announced: "On behalf of my native Switzerland, I wish to protest!" One of the capital's best known painters, Walton was appointed chairman of the Commission of Fine Arts in 1963 by his friend President John F. Kennedy.

Bringing forth a new nation, despite certain evidence t the contrary, involves a lot more than hiring a car tographer, denouncing the "imperialist, neo-colonia policies" of the United States, and then accepting generou offers of aid and assistance from Washington. Naturally, helps to have a capital, preferably one with a good view, an enough cash to defend it during the independence cere monies, at which a strange flag will be raised to the stirrin cadences of an unfamiliar anthem. But this is hardly as simpl as it might seem. To be sure, the departing colonial maste can be expected to provide a freshly painted governmer house, and a week's pay for the constabulary may be ob tained by raising the fees for exit visas. Anyone, alas, can de sign a flag—and often has (William Walton is exempt fro this stricture, but his examples below are purely hypothet cal). A national anthem, however, is a different matter, or that demands careful consideration, the utmost in tact, an a touch of creative larceny.

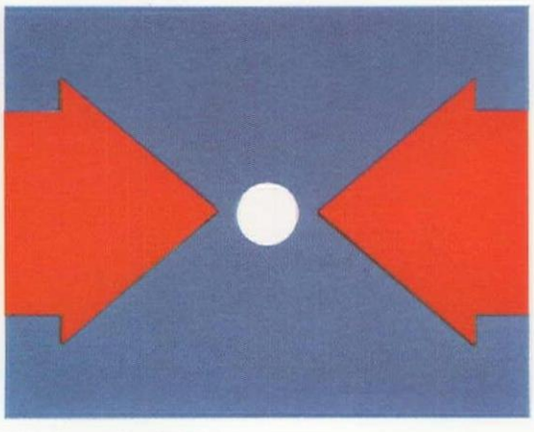
Why have an anthem at all? It is a question most fre quently asked by those who have not tried to start a countr of their own or who have attempted to memorize all or hundred and fifty-eight Homeric verses of the Greek an them. The answer is protocol. Without the accustome rituals of diplomacy, foreign ministers would arrive an depart unheralded and unsung; in fact, they might choos not to arrive at all. International intercourse would b severely curtailed: treaties would remain unnegotiated an unrenegotiated and unsigned; trade would be hampered, a liances unforged, and wars undeclared; foreign aid woul not be appropriated, and Keynesian economists would mu ter darkly about the growing National Surplus.

But if an anthem is a necessity, as it appears to be, ho does one go about composing one? The experience of th long-established nations, whose anthems evolved throug tradition and habit, is of little use to the emergent natio For instance, the Italians are perpetually donning "Th helmet of Scipio" and wondering "Where is Victory?" Th Poles seemingly never tire of urging: "On! On! Dabruski! (the general who led their legions at the end of the eigh eenth century), and the Portuguese gustily reminisce abou their "heroes of the sea." The Dutch, somewhat incon gruously, still vocalize the pledge by their valiant princ William of Nassau, of "a life's loyalty" to the king of Spai Even mountainous Andorra, with a smaller population tha Ravenna, Ohio, remembers that:

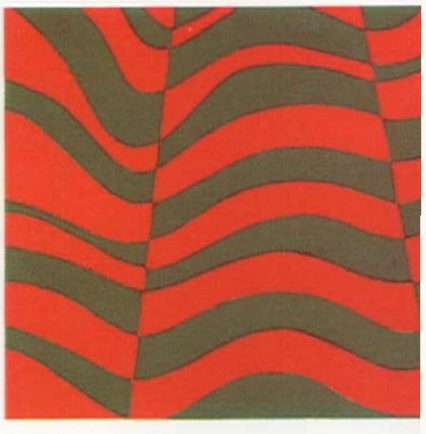
COURTESY *The Washington Post*



Flag for a Black Nation Emerging from White under Red Domination



Flag for a Small Neutral



Flag for a Wavering Nation

The great Charlemagne, my Father,
From the Saracens liberated me . . .
I was born a Princess,
A Maiden neutral between two nations;
I am the only remaining daughter
Of the Carolingian empire.

Though a measure of braggadocio is good for the national psyche, there are limits beyond which chauvinistic pride becomes pretension. For example, the postholocaust archaeologist confronted an eon hence with the parched fragment

Our valor and our writings are the envy of the ages. . . .
The Gems of the East are her land and sea.
Throughout the world her good deeds flow from pole to pole,
And her name is her glory since time began

might, without more evidence, have difficulty assessing Lebanon's actual role in the current galaxy of nations.

Actually, the best solution to the lyrics problem, if the new African states are valid examples, seems to be a sprightly, innocuous blend of optimism and necessity. Very often the African anthems spell out a particular trinity of national need: in the Congo it is "unity, work, progress"; in the bordering Central African Republic it is "work, order, and dignity"; in Mali, the chant is for "one people, one goal, one faith"; the natives of Rwanda seek "peace, truth, comprehension"; and the Malawians sing to "put down each and every enemy/Hunger, disease, envy."

The question of who will write the anthem is immensely simplified by electing a poet as president. Senegal did in 1960, and Léopold Sédar Senghor rose to the occasion:

Sound, all of you, your Koras,
Beat the drums,
The red Lion has roared,
The Tamer of the bush with one leap has rushed forward
Scattering the gloom.

But this solution has its obvious limitations; so do official commissions, although it is worth noting that it was not a committee that produced the ear-jarring opening couplet of the second verse of "God Save the Queen":

O Lord our God arise,
Scatter her enemies . . .

From a political standpoint, there are certain advantages to be gained from conducting a nationwide anthem contest; if nothing else, the competition has the effect of informing the population that it now belongs to such-and-such country. The winning entry, of course, should receive an appropriate state award, say political amnesty. An act of the legislature is all that is necessary to make the song official, but if a general consensus is more desirable, then there is always the example of Kenya, whose anthem was adopted by the public acclamation of its school children.

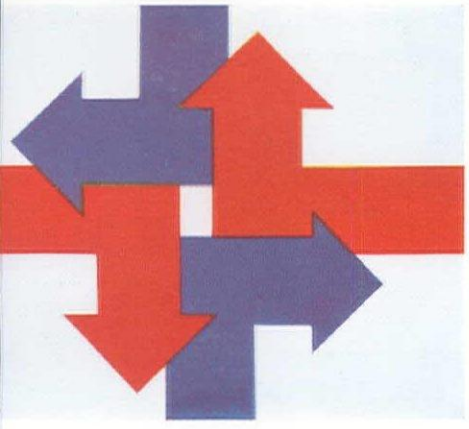
One caution: as a rule, it is best to avoid politics, ideologies, and especially personalities. The Soviet Union, faced with the pragmatic exigencies of turning back Germany's "barbaric hordes" in 1943, scrapped the "Internationale" in favor of a more patriotic ballad extolling Lenin and Stalin. All was harmonious until 1956, when Khrushchev announced that his predecessor wasn't worth singing about. The Russians, past masters at the loose-leaf approach to history (the *Great Soviet Encyclopedia* once issued its readers razor blades to help them replace a selection on the NKVD's Beria with one on the Bering Strait), simply deleted the vanquished Generalissimo with a pen stroke. But the Bulgarians, lacking the revisionist experience of their Soviet comrades and confronted with

How great is the sun of our Lenin and Stalin,
Whose unequaled splendor throws light on our way!
The hearts which Dimitrov [d. 1949] has fired are flaming
In struggle and work with so dazzling a ray!

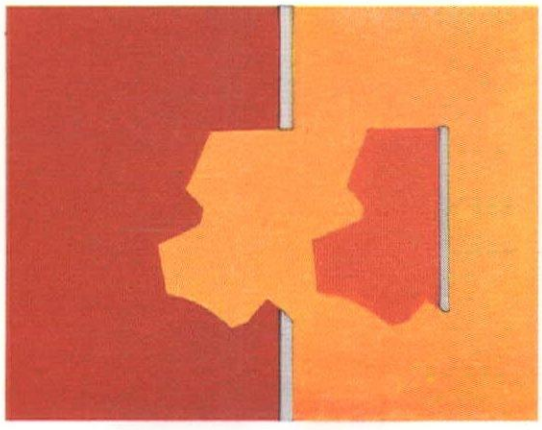
finally capitulated in 1962 and held a new anthem contest.

Finding an appropriate musical score is no problem, so long as it is vaguely familiar and within the octave range of half the population and two-thirds plus one of the legislature. Most hymnals are a veritable trove for the unimaginative composer (a practice that originated with the English, who launched the anthem fad in the eighteenth century). If a hymn doesn't seem apropos—and mention of a Supreme Being is now passé—the leitmotifs of native folk songs interspersed with swatches of the "Marche Consulaire" will suffice. For thirteen nations, such as Spain, Afghanistan, Saudi Arabia, and Mauritania, the music is enough; even Kuwait, which could afford a regiment of Alan Jay Lerners, prefers to do without words. But such caution runs counter to that daring impulse pounding in the breasts of all those who, having almost ruptured their vocal cords singing the "Star-Spangled Banner," secretly long to launch a new nation on a Gregorian chant.

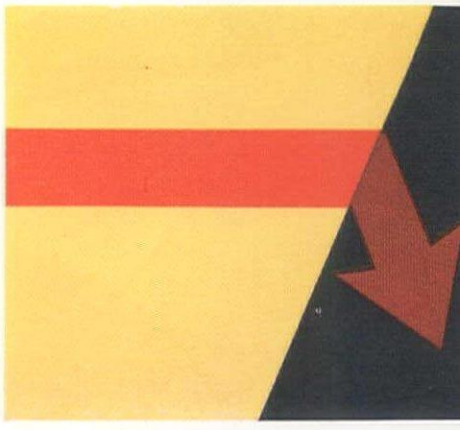
ROBERT S. GALLAGHER



or a Nation at the Crossroads



Flag for a Seceding State



Flag for a Nation at the Brink



Charles Darwin at thirty, painted by George Richmond

Charles Darwin

His theories have already made one profound change in man's ideas about himself and his world. Now, in alliance with the new science of genetics, they may do it all over again

By J. W. BURROW

Charles Darwin's body lies in Westminster Abbey, close to the grave of Sir Isaac Newton. It is a proximity which few would challenge, nor is there any oddity in the presence there of Newton, devout Christian and Biblical scholar that he was. Yet the presence, in the Abbey Church of St. Peter, of Darwin, whom a clergyman had once pointed out in the British Museum to a friend as "the most dangerous man in England," arouses more contradictory reflections: a pleased sense, perhaps, of the appropriateness of the honor, and gratitude for the broadmindedness of Dean Bradley who, on Darwin's death in 1882, permitted it? Or wry admission of the anomalies created by combining in one building the functions of national pantheon and Christian worship? Satisfaction at a symbol of truce between science and theology? Or simply a sharper sense than usual of the ironies of death? Woe unto you when all men praise you; you are probably dead.



Semnopithecus comatus/Cebus capucinus



Ateles marginatus/Cebus vellerosus

Yet though Darwin rests undisturbed in a Christian sepulcher, and his place in the history of science is now as assured as that of Newton or Galileo, his influence, the massive changes he wrought in the whole structure of men's ideas about themselves and the world they live in, is still immensely, even contentiously, alive—more alive today, perhaps, than half a century ago. The great nineteenth-century war between science and religion may have subsided into cheerful reconciliation, mutual indifference, or isolated border forays, but among the numerous books and articles about Darwin and his work which continue to appear, a fair sprinkling are critical and hostile, though perhaps for slightly different reasons from those which gave that Victorian clergyman such a *frisson* when he and his friend came across the archdestroyer pottering in the Bird Room of the British Museum.

The clergyman had probably been educated, as Darwin himself had been, in that school of Christian apologetics known as "Rational Christianity," of which the work of Darwin's neighbor in death and fame, Isaac Newton, had been the chief inspiration. Rational Christianity and its close but more radical partner, deism, represented a kind of compromise, a consciously created solution to the problems raised by an earlier conflict between religion and science; that earlier conflict was less overt but more insidious than the one of which the focal point was to be Darwin's *Origin of Species*, and it was profoundly disturbing to seventeenth-century Christian apologists like Pascal, who saw in the rise of experimental science a potential threat to belief. The crisis was overcome, at least in England, at a cost of some sacrifice of the miraculous and emotional elements of Christianity. A house of intellect was established in the eighteenth century in which men of widely differing views could conduct their arguments and all feel more or less at home, though of course there were always a few defiant atheists who refused to come in out of the cold. The England into which Charles Darwin was born in 1809 was in most respects a rougher and more dangerous society than the one in which he died, more vulnerable to organized and haphazard violence, to the social effects of callous indifference, and to the accidents of nature. Intellectually, however, the world was a far cozier and more reassuring place than it was later to become, and the chief, though not the only, agent of the change was to be that peaceable Victorian family man, Charles Darwin.

Much of this apparent coziness was due to a relative lack of historical sense, which, paradoxically, helped men to feel at home with the past. Educated men could speak familiarly of Moses, Abraham, and Solomon, and derive maxims from their words and deeds with no sense of estrangement; Dean Milman became very unpopular for calling Abraham a sheik. One reason for familiarity with the past was the relatively short time span it was thought to cover. Most men at the beginning of the nineteenth century thought that the world had been created only some six thousand years before, although perhaps few would have cared to be as specific as a seventeenth-century vice-chancellor of Cambridge University, according to whom "man was created by the Trinity on October 23, 4004 B.C. at nine o'clock in the morning."

But when the Rev. John William Burgon apostrophized Petra as a "rose red city half as old as time," he meant it.

The world was not only imaginatively comprehensible, it was benevolently ordered. It is true that, ever since Copernicus and Galileo, the earth could no longer be regarded as the center of the universe; the music of the spheres was stilled. But God presided every instant, through the invisible filaments of gravitation, over the perfectly ordered harmony of the planetary motions. And if the earth was not the center of the universe, man was still emphatically the center—the end and purpose—of life on earth, a life which had issued, fully formed in all its variety of fish and flesh and fowl, directly from the hands of the Creator, to be subject to a man quickened into life, as in Michelangelo's famous fresco, by the outstretched finger of God: "fill the earth and subdue it; and have dominion over the fish of the sea and over the birds of the air and over every living thing that moves upon the earth." A characteristic treatise published in 1833 was entitled "On the Power, Wisdom, and Goodness of God as Manifested in the Adaptation of External Nature to the Moral and Intellectual Constitution of Man." It would be hard to think of a neater inversion of the Darwinian theory.

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Defender of the Faith: Samuel Wilberforce, irate Bishop of Oxford

In harsher climates and in times when man's control over nature was more precarious, this doctrine often needed supplementation. The Fall was necessary to explain the tiger, and men wondered whether there were insects in Eden. By the eighteenth century, however, nature was sufficiently tamed to be idealized, at least by those who did not themselves labor on the land, and educated men were sufficiently leisured and urban to be sentimental about it. The eighteenth century was the heyday of the cult of a benevolent and edifying nature, while the Fall receded more and more into the theological background.



Cynocephalus mormon

Moreover, men were beginning to have some understanding of the complex interactions in nature, of the contribution to the animal and vegetable "balance" of even the noxious and disagreeable. To pursue in any detail the pleasing evidences of divine purpose and harmony in the Newtonian heavens required some rather abstruse mathematics; to trace the same evidences in each leaf, stamen, and insect was well within the scope of any country clergyman with a pair of good legs and a collecting basket. To follow the workings of nature was to explore the mind of its Creator and to receive renewed assurances of His benevolence. The proudly displayed "collection" was almost the equivalent of a Bible laid open on a table. God was sought, not in mystical exercises in one's chamber—that would have been "enthusiasm," which was both morbid and ungentlemanly—but at the bottoms of ponds and in the middle of hedges. "Natural Theology," as it was called, was the mainstay of Rational Christianity. Natural history became something of a craze in the first half of the nineteenth century and works on it outsold popular novels. When *The Origin of Species* appeared in 1859, it went quickly through three editions and found a readership which, despite the many vulgar errors that grew up about what Darwin had said, was far better prepared, both by the trend of contemporary theology and by the taste for natural history, to appreciate arguments relating to the nature of species, plant life, and animal behavior, and also the effects of selective breeding, than the reading public would be today. Bug hunting was the Trojan Horse of Victorian agnosticism.

Darwin himself was a lover of nature, a collector and sportsman, before he was a man of science. He grew up with the tastes of an English provincial gentleman at a time when hunting, shooting, and the breeding of horses and dogs formed a staple amusement of upper-class Englishmen. In his father's unsympathetic words: "You care for nothing but shooting, dogs, and rat-catching, and you will be a disgrace to yourself and all your family." Darwin, in fact, belongs to the gallery of famous men whose school days were undistinguished and profitless. After he had shown no more aptitude for medicine, the family profession than for the classical curriculum of Shrewsbury School, his father prepared wearily to follow the established English custom of bestowing the fool of the family on the Church, and so Darwin was sent up to Cambridge in 1827. He seemed destined to become yet another botanizing Victorian clergyman. From this he was res

cued by an accident which seems almost to have been sent by Providence in a fit of self-destructiveness, for from it was to flow the work which so rudely shook men's belief in divine superintendence of human affairs. In 1831 H.M.S. *Beagle*, commissioned by the Admiralty to make a surveying voyage in the southern hemisphere, was in need of a naturalist. Darwin was recommended by his friend and mentor J. S. Henslow, Professor of Botany at Cambridge, and after some hesitation, he accepted. He was away for five years.



Semnopithecus rubicundus

The voyage of the *Beagle* was, as he said himself, the formative experience of Darwin's life. He lived hard, working in the cramped conditions of a sailing ship, rounding Cape Horn and making expeditions hundreds of miles inland through dangerous and difficult country, collecting, observing, and interpreting the flora, fauna, and geological formations of South America and the islands of the Pacific and the southern Atlantic, and visiting also Australia and South Africa. The forty-thousand-mile voyage of the *Beagle* gave Darwin, at first hand, a bird's-eye view of the natural world, from the tropical vegetation of the Brazilian jungle to the peaks of the Andes. It was an opportunity such as few scientists had had, though there were to be others later, including T. H. Huxley, who obtained a post similar to Darwin's on H.M.S. *Rattlesnake*.

Darwin took with him on his voyage, besides his own knowledge and aptitudes, one indispensable tool for interpreting what he saw. Before sailing, Henslow pressed upon him the recently published first volume of Charles Lyell's *Principles of Geology*, with instructions to read but on no account to believe it. Darwin obeyed the first injunction but not the second. Lyell was foremost among those geologists who refused to accept that the crust of the earth had been formed in a few thousand years by earthquakes, floods, and volcanic eruptions far more vast than anything now observable. He insisted that changes in the earth's formation must be accounted for only by geological events similar to those with which men were familiar, which entailed an increase in the estimated age of the earth of many millions of years. There are few more dramatic episodes in the history of thought, not even the acceptance of Darwinism itself, than the change within a few decades from a prevailing view of geological time that could be imaginatively grasped to one that, like astronomical distances, could be comprehended only scientifically and mathematically. The corresponding debate in biology, however, remained unsettled. Could biology, like geology, dispense with the sudden interventions of Providence, accountable for by no natural law, and explain the formation of species by the ordinary laws of nature? Noah's Flood was no longer a necessary scientific hypothesis. Could Adam be similarly dispensed with?

The folklore of scientific invention and discovery has left no striking tale of the revelation to Darwin of the clue to the origin of species, like Newton's apple, Stephenson's kettle lid, or Galileo dropping weights from the leaning tower of Pisa. It was too gradual and subtle a process for that. Darwin had begun the voyage of the *Beagle* believing, like most people, in the fixity of species. During the voyage, and while writing up his notes on it, he underwent two conversions. He became converted to Lyell's interpretation of geology, and he began to doubt the fixity of species. The latter, however, was to remain for years a secret confided only to a chosen few, as Darwin wrestled with objections, accumulated evidence, and prepared his friends for the revelation that—as he wrote to Joseph Hooker in 1844—"I am almost convinced (quite contrary to the opinion I started with) that species are not (it is like confessing a murder) immutable. Heaven forfend me from Lamarck nonsense of a 'tendency to progression,' 'adaptations from the slow willing of animals,' etc! But the conclusions I am led to are not widely different from his, though the means of change are wholly so."

The theory of evolution in biology was already an old, even a discredited, one. Darwin, in his preface to *The Origin of Species*, listed more than thirty precursors—and was accused, in spite of this, of serious omissions. Greek thinkers had held the view that life had developed gradually out of a primeval slime. Diderot, Buffon, and Darwin's own grandfather, Erasmus Darwin, in the eighteenth century had held more or less fully worked out theo-

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Defender of Darwinism: T. H. Huxley, biologist and witty debater

ries of the origin of species by evolution, or transformism, as it was called. The objections to pre-Darwinian theories of evolution were partly based on the assumption of a short geological time span, which did not allow evolution time to operate, and partly on the speculative and puzzling explanations of how the process worked. In the most noteworthy pre-Darwinian evolutionist works—Erasmus Darwin's *Zoonomia* (1794) and J.-B. Lamarck's *Philosophie zoologique* (1809)—it was supposed that the new needs of an organism somehow gave rise to new organs which were then transmitted to offspring, or even that some inner impulse toward perfection caused the new organs to develop. This was merely to explain one mystery by another. True, the same might at the time have been said of Darwin's own explanation, which assumed variations in offspring (though the explanation of these variations was still not understood), but if it was a mystery, it was at least one of everyday occurrence, which was not true of the development of new organs by mature organisms.



Callionymus lyra

It was the unscientific character of earlier evolutionary theory that made scientists like Lyell and Huxley, and Darwin himself, skeptical. All the same, their predecessors made some telling points. There were the improvements made in some domesticated animals and plant species by artificial selection—of which Darwin was to see the full significance. There were embryonic changes: the development of tadpole into frog and larva into butterfly. There were vestigial organs—noted by Erasmus Darwin—which seemed once to have served a purpose but now served none, suggesting that the modern species might be radically different from the ancestral one to which such an organ was useful. And there was the fossil record, unmistakable evidence of the *extinction* of species. The giant bones which lay embedded in the earth proved that the Creator could change his mind. Struggle and waste in nature were familiar to the nineteenth century long before *The Origin of Species*; Tennyson's "Nature, red in tooth and claw" is a pre-Darwinian quotation. But what naturalists did not see was that this could be used to explain the formation as well as the extinction of species.

Darwin had been struck during his voyage by a number of facts which seemed at odds with the special creation of each species. The organic life he studied so intensively and collected so assiduously seemed littered with clues, odd similarities, juxtapositions, and discontinuities, all surely significant, all part of some larger pattern if only one could discern it. Why did closely allied animals replace one another as one traveled southward? Why did extinct fossil species show such a close structural relation to existing animals? Above all, why, in the Galápagos Islands, did the birds and the famous Galápagos tortoises show slight variations from island to island, so that the local inhabitants could always tell from which island a tortoise had come? None of these things seemed to fit in with the special-creation theory. They began to tell an intelligible story once one doubted the fixity of species.

Ten months after his return to England, Darwin in 1837 opened his first notebook on "The Transmutation of Species"—the forge in which man's whole conception of the natural world was beaten into a new and enduring shape. The cause of change, Darwin was sure, must lie in reproduction, in heritable variations rather than in spontaneous changes in the living organism itself. By the end of 1838 the key was in his hand: natural selection of favorable variations in offspring. Because of these variations, and changes in the environment, nature was unstable, variable, not static, "those forms slightly favored getting the upper hand and forming species." Later, in the *Origin*, he was to describe in detail the "war between insect and insect—between insects, snails, and other animals with birds and beasts of prey—all striving to increase, all feeding on each other, or on the trees, their seeds and seedlings, or on the other plants which first clothed the ground and thus checked the growth of the trees!"

Darwin's own account suggests that in part he owed the inspiration for his theory to reading T. R. Malthus's *Essay on Population* (written in 1798), though the dates in Darwin's journal throw some doubt on this. Malthus's essay purports to show that population growth will always tend to outrun food supply unless checked by war, famine, or disease. Malthus's principle could obviously be extended in an evolutionary direction by concentrating on the struggle for existence and the question of why some survived rather than others. Seven years before the publication of *The Origin*, Herbert Spencer had already given Malthus such an interpretation in his brief essay on "The Theory of Population," but he applied it only to human beings, not to the problem of species as such.

Darwin was still planning a much longer work than *The Origin of Species* was in fact to be, when his hand was forced by the dramatic coincidence of the arrival of a paper from Alfred Russel Wallace in which the theory of natural selection was clearly set out. Darwin, in anguish, remarked, "I would far rather burn my whole book than that he or any other man should think I had behaved in a paltry spirit." But Darwin's priority was acknowledged, and the presentation of the Darwin-Wallace thesis as a joint paper to the Linnaean Society on July 1, 1858, was one of the most unsordid episodes in the history of science. It was more than twenty years since Darwin had begun his first notebook on "The Transmutation of Species." The Linnaean Society paper caused little stir; not so the publication in the following year of *The Origin of Species*. The "murder" Darwin had confessed to Hooker fifteen years earlier was out.

As a book, *The Origin of Species* gains enormously from the range of interests that a natural scientist could still, in the mid nineteenth century, allow himself. It is a work of original research—as original as anything ever published—yet it is also a vast panorama of the natural world seen in the light of natural selection and in the almost endless perspective of geological time as it was now understood. Its author was not merely another evolutionist, or even one who, like Wallace, had seen where the key to evolution lay. He was a geologist who had produced the modern theory of the formation of coral reefs, and explained, or



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Skepticism about evolution appears in this pre-Darwin cartoon: a seminar of crocodiles studies the "primitive" skull on the podium. They cite their own prolonged jaws as proof of general superiority.

geological grounds, the gaps in the fossil record. He was a painstaking research worker, one of the world's leading authorities on barnacles, who devoted much of the latter part of his life to the fertilization of orchids and the activities of earthworms. His equipment as a student of nature was virtually complete. The former undergraduate beetle-collector was geologist, botanist, zoologist, and later, physical anthropologist. He was a paleontologist who had himself dug up a fossilized Megatherium (an extinct ground sloth), an ecologist who had observed the interrelations of organic life in tropical forests and in the grounds of Down House, his Kent home, and a former sportsman who was fully aware of the effects, in dog breeding, of selection by man. The first chapter of the *Origin* was called "Variation under Domestication."

The furor created by the publication of *The Origin of Species* was not due simply to the fact that it contradicted the literal word of the first chapter of Genesis. Many Christians had already reconciled themselves, for example, to interpreting the seven days allotted to the Creation in an allegorical sense. Religious doubt, that characteristic Victorian malaise, with its crop of social and spiritual catastrophes, of "dangerous" books and clerical resignations, had become almost a commonplace of the intellectual scene since the first impact of the new German Biblical criticism in the 1830's.

The *Origin* owed its notoriety primarily to two things. First, it destroyed at one blow the central tradition of rational Protestant religious apologetics—Natural Theology. All the beautiful and ingenious contrivances in nature, which Natural Theology had explained as the benevolent design of an Almighty Clockmaker, Darwin's theory explained by the operation of natural selection: the struggle for life, preserving random hereditary variations.

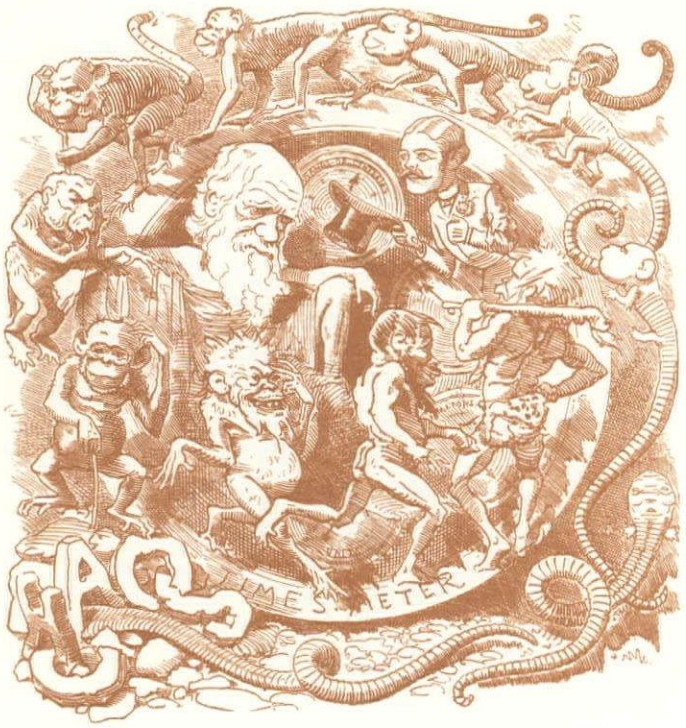
Second, the *Origin* became notorious for something it did *not* say, though anyone who read it intelligently could not fail to be aware of the implication: that man was first cousin to—*not* descended from, though this was an error often made—the ape and the orangutan. As Darwin had written in his notebook, "animals may partake from our common origin in one ancestor . . . we may be all netted together." Darwin only completed this aspect of his work in his later books—*The Descent of Man* (1871) and *The Expression of the Emotions in Man and Animals* (1872)—but the public seized on it at once. Darwinism was "the monkey theory," though monkeys are mentioned in the *Origin* no more frequently than other species. This was, however, the crux of the great Oxford debate in 1860 between T. H. Huxley and Bishop Wilberforce, at which Huxley made the famous retort, in response to the bishop's gibe, that he would prefer to have an ape for a grandfather than a man "possessed of great means and influence" who used his influence to bring an important scientific discussion into ridicule.

This episode was characteristic in many ways: of Wilberforce, whose nickname was "Soapy Sam"; of Huxley; of what was to the layman the central issue of Darwinism; and of the reasons why Darwin's supporters were victorious—not only because the weight of argument was on their side, but because they were always more righteous than the righteous. Infidelity had hitherto been equated with immorality and lower-class radicalism. Only a few years before, the geologist Hugh Miller had remarked, "it invariably happens that when persons in these walks [of life] become materialists, they become also turbulent subjects and bad men." It was an argument that died hard; Darwin was rebuked for publishing *The Descent of Man* "at a moment when the sky of Paris was red with the incendiary flames of the Commune." Hence it was of the utmost importance that the leading Victorian agnostics—Darwin, Huxley, Leslie Stephen (who resigned from holy orders as a result of reading the *Origin*)—were gentlemen and family men of unimpeachable sexual and financial respectability. They turned the tables on their opponents by taking a higher moral line. It was *immoral* to believe without proof, to refuse, as Huxley said, borrowing the language of religion, "to sit down before the facts as a little child."

Of course, Darwin's theory was not immediately accepted by all scientists, either; in England its opponents were led by Sir Richard Owen, superintendent of the natural history department of the British Museum, while in America the chief protagonists for and against Darwin were Asa Gray and Louis Agassiz. Darwin himself played little part in the controversies that surrounded him, devoting his time to his orchids and earthworms and contenting himself with boyish shouts of applause from the sidelines. He was not interested in metaphysics and was not by nature combative. He was, moreover, by now an invalid.

There has been much speculation about Darwin's malady. Was it the aftermath of some tropical illness, caught during the voyage of the *Beagle*, which confined the mountaineer and explorer of the 1830's to his sofa at Down House for a large part of his later life? Or was it, as has been suggested, psychological in origin, due to a feeling that in removing God from his part in the Creation he had committed a kind of parricide? Much has been made, too, of Darwin's confession of the withering, in later

life, of his feeling for beauty. He has been called "the fragmentary man," "the anesthetic man," and so on. It has been remarked, not altogether unfairly, that he debated whether to marry—he married his cousin, Emma Wedgwood, in 1839—rather as a man might decide whether to keep a dog, but it is difficult not to find something attractive in his reflection: "charms of music & female chitchat, good for one's health; but forced to visit and receive relations, *terrible loss of time.*" There was always a childlike simplicity about Darwin, which has endeared him to some commentators and irritated others.



"Man is but a worm" runs under this Punch *cartoon, showing his progress from crawler to monkey, ape man, and hoary evolutionist.*

To some the implications of Darwin's theory were negative and desolating. The whole earth no longer proclaimed the glory of the Lord. Paradoxically, in revealing the closeness of man's links with the rest of creation, Darwin seemed to have cut the emotional ties between man and nature. The world was not, apparently, the rational creation of a Being whose purposes, though infinitely beyond man's full comprehension, were in some sense akin to the purposes and feelings of man himself (at least they *were* purposes). Nature, according to Darwin, was the product of blind chance and man a lonely, intelligent mutation, scrambling with the brutes for his daily bread. To some the sense of loss was irrevocable; an umbilical cord was snapped. Faced with "a cold, passionless universe," the only appropriate attitude seemed, at best, a dignified resignation "with close-lipped patience for our only friend." Unlike the beliefs of the Greeks and the Stoics, the eighteenth-century Enlightenment, and the rationalist Christian tradition, Darwinian nature held no clues for human conduct, no answers to human dilemmas. The modern ethics of the void—existentialism and all ethical creeds that make goodness not an innate property of things but a matter of human decision—have as an underlying assumption the purposelessness of the material world. So too, probably, did the rejection of "nature" as the prime subject for art by the æsthetes of the late nineteenth century. Man no longer characteristically expects to find nature suffused with divinity; he must create it out of his own visions.

But there were others for whom the two-thousand-year-old tradition of seeking prescriptions for human action in nature was hard to break. They found—and they were mostly the strong, the successful, or the embittered—the prescription they were looking for in "the survival of the fittest." They adopted natural selection as the key to "progress," though Darwin had not spoken of progress, only of adaptation. There were many fields, in the late nineteenth and early twentieth centuries, to which this formula seemed conveniently to apply. In Europe the nations watched each other, trained their young men, and waited for the day of reckoning. In America there were still great industrial and financial empires to be won by buccaneering methods. In Asia and Africa and the Pacific there were backward peoples to be brought within the orbit of the world's markets and taught their necessary subordination to the white man.

It is a strange paradox that Darwin, who gave up shooting because of the cruelty it entailed, should have been one of the begetters of the strident power philosophies of the later nineteenth century. The notion of the struggle for existence was not invented by Darwin, but the tendency to apply it to social relations was enormously reinforced by the apparent "scientific" backing given to it by Darwin's theory. Even Marx and Engels adopted Darwinism as the biological counterpart to the class war, though Darwin respectfully declined the honor of having the English edition of *Das Kapital* dedicated to him. "The survival of the fittest" in a human context could be all things to all men. Everything depended on what you took as the competing units: individuals, classes, races, or nations. It even invaded academic sociology, in the work of Herbert Spencer and Walter Bagehot in England and Ludwig Gumplowicz in Austria, the Russian anarchist Prince Kropotkin, and William Graham Sumner in the United States. To Sumner "millionaires are a product of natural selection"—an argument which appealed to Andrew Carnegie. The doctrine of the survival of the fittest also recommended itself to Theodore Roosevelt and to the British imperialists of the late nineteenth century. The belief that war was "a biological necessity," as one of Germany's leading military thinkers put it, helped to shape that country's military and political thinking before the First World War; filtered through innumerable hack popularizations, it formed a vital ingredient in the pseudoscientific mess of racialism, nationalism, and anti-Semitism swallowed by the young Hitler in the public reading rooms of Munich and Vienna. Racial doctrines entered European thought before Darwin, as an offshoot of developments in anat-

omy and philology, and Darwin himself did not endorse the application of his theory in social contexts—Huxley, indeed, explicitly repudiated it—but inevitably it provided a kind of crucible into which the fears and hatreds of the age could be dipped and come out coated with an aura of scientific authority.

The bloodletting of two world wars, and the prospect that organized human aggression, far from improving the species, may actually eliminate it altogether, have dampened interest in this application, or rather misapplication, of Darwin's theory. Public attention now concentrates either on theological interpretations of evolution, in the manner of Teilhard de Chardin, or on the implications of the new factor which the development of human intelligence, with its powers of storing and communicating knowledge and hence of purposive control of the future, introduces into the evolutionary picture.

Seen in this way, evolution becomes a great adventure in which man, product of random mutations and of a suffering, blindly struggling creation, becomes, at least in part, the arbiter of his destiny. If this is to be so, a major contribution to control of the future will be the chief development in biology since Darwin: understanding the mechanism of heredity. Genetics places the thread of life in men's hands, the chemical ribbon linking past and future. In his notebook Darwin had written: "Given transmutation theory, instinct and structure become full of speculation and line of observation. My theory would lead to study of instincts, heredity and mind heredity."

When the *Origin* was written, the science of genetics did not exist. Evolution was the result of natural selection acting on heritable variations in offspring, but, as Darwin admitted, "Our ignorance of the laws of variation is profound." The gap had begun to be filled by the experiments of the Moravian monk Gregor Mendel, but Mendel's work was rediscovered only at the beginning of this century. At first Darwinian natural selection appeared to have no application in the new science, and Darwin's reputation sank somewhat. Later, however, genetic theory began to explain variations as a consequence of environmental selection acting on the results of mutations of genes, and today selection is a controlling concept in the study of genetics, with its incalculable prospects, exhilarating and appalling, of insight into the nature of life and its possibilities for good and evil in the molding of man's physical and intellectual make-up.

Darwinism was a nineteenth-century *cause célèbre*, a fashionable formula, like Hegelianism, for applying scholarship or prejudice to the results of science. It was also, like the work of John Dalton or Michael Faraday, a permanent contribution to men's knowledge of the natural world. Yet even this comparison diminishes Darwin's real stature. As with Copernicus and Newton, before and after Darwin are different intellectual territories.

J. W. Burrow teaches at the University of East Anglia, England, and is the author of Evolution and Society, A Study of Victorian Social Theory *(Cambridge, 1966.) The zoological engravings on these pages are from an early edition of Darwin's* Descent of Man; *portraits of his immediate kin courtesy Royal College of Surgeons.*

The Descent of Darwin

A PARTIAL GENEALOGY



Josiah Wedgwood
master potter
maternal grandfather



Dr. Erasmus Darwin
physiologist and poet
paternal grandfather



Dr. Robert Waring Darwin
physician
father



Susannah Wedgwood
mother



Sir Francis Galton
eugenicist
half cousin



Emma Wedgwood
wife and cousin



Charles Darwin
evolutionary theorist



William Darwin
banker
son



Sir George Darwin
mathematician
son



Sir Francis Darwin
botanist
son



Major Leonard Darwin
engineer
son



Sir Horace Darwin
civil engineer
son



Sir Charles Darwin
physicist
grandson



Bernard Darwin
sports writer
grandson



Ralph Vaughan Williams
composer
grandnephew



Sir Geoffrey Wedgwood Harrison
Ambassador to Russia
great grandnephew



C. V. Wedgwood
historian
cousin thrice removed



Sir Robin Darwin
Dir. Royal Coll. of Art
great grandson



Angela Huxley and George P. Darwin
great grandchildren of Huxley and Darwin

In the United States of America not very long ago, a good many conditions prevailed that seem rather odd today. The birth rate was dropping faster than the death rate, and demographers, looking to the far future, were gloomily predicting a more or less depopulated country. Almost half of all Americans lived outside cities, towns, and suburbs, and almost 40 per cent, urban and rural, lived without a bathtub or shower. The average wage for production workers in manufacturing was sixty-three cents an hour, or $23.86 a week. The average annual earnings of doctors amounted to $4,229; of lawyers, $4,391; of college teachers, a bit under $3,000. The well-to-do white-collar suburbs of Madison and Summit, New Jersey, boasted average annual family incomes of $2,500. On the other hand, lunch at a good restaurant could be had for sixty-five cents, a summer suit at Gimbel's for eight dollars, a silver-fox coat at Bonwit Teller for $165, a new Ford sedan for $685, and a six-day cruise to Nassau for fifty-five dollars. Income-tax exemptions and rates were such that the lawyer or doctor of average income, if he were married and had two children, had an annual tax bill of about twenty-five dollars, while a highly successful businessman in the same family situation whose net for the year was $16,000 owed the government less than a thousand dollars. The average industrial worker paid no income tax at all, and indeed, only about one American in thirty-three paid any. A great howl went up when the President proposed a federal budget of about nine billion dollars, which sum was needed, among other purposes, to support an Army and Navy totaling about three hundred thousand men.

Nor was optimism about the nation's economic future in the air; experts were talking about how a formerly expanding economy had now been replaced by a "mature" one, and a well-known social philosopher was saying, "Today capitalism has reached a frontier. . . . we have arrived at the age of stability; our horizon has contracted." Other signs of the times were the facts that the average American had had just over eight years' schooling, or an elementary-school education; that a quarter of all our housing units had no running water, 35 per cent of them had no flush toilet, and all of them had no television. Cooking on wood- or coal-burning ranges was the rule in slightly less than half our homes, and Sears, Roebuck was advertising—for $76.95, only $5 down—a handsome, cast-iron coal range which the firm claimed to be "the favorite of young moderns" because "no other range achieves its brilliant styling."

If the country thus described now seems rather bleak, spars frugal, quaint, and faraway, it may seem even stranger when o learns that the year was 1939. But other aspects of the same tir seem more reassuringly familiar. Although just about half of o present population was not yet born, there were country club evenings of bridge, traffic jams, and even a few devotees of the ne fad of back-yard cookery. Parents and teachers were debati whether or not sex education ought to be included in school cu ricula. Commencement speakers in 1939 deplored godlessness a called for a return to traditional beliefs. *The New York Times* marked on the mobs of "almost naked" people on resort beache although in the age of the bikini it is easy to see how little the *Tim* understood the potentialities of the situation. Moralists deplor the purposelessness of youth (and youth happily took up the theme

Granting that the seeds of many recent changes had been sov before 1939, the quarter-century since then has seen changes many aspects of American life so rapid and far-reaching as to unprecedented in our own national experience, and perhaps u precedented in that of any nation other than those suddenly tran formed by war or plague. Irving Kristol has written, "It is fair say that 'our times' begin in 1945, with the end of World War in Europe." I see 1939 as the watershed year between the old America and the newer one, partly because various important tec nological developments happened, by one of those accidents th may not be accidental, to get started then, but much more impo tantly because it marked the end of one era, that of the depressio and the beginning of the war that was to be the basis of our tran formation. The depression was petering out anyway in 1939; boo and expansion were on the way, even though the economists of t time could not see it. The war enormously accelerated the proce by creating the need for a vast military and war production esta lishment that ended unemployment and sent national producti zooming. But much more significant in the long run, the war, making scientific and technological advance into matters of nation life and death, was the forceps that brought the new age into bein It need scarcely be said that scientific and technological change the heart of the story of the postwar United States.

And change of all sorts is the heart of the story of the mode world—or is it? Two traps, it would seem, lie in wait for the stude of change. One is the tendency to look on the appearance of dras

The United States was on the threshold of a new era, but to the experts the future looked like a fourteen-ton typewriter

1939 / 1966 The Anatomy of Change

By JOHN BROOKS

hange as an illusion arising from the inexperience, cultural egotism, nd lack of perspective of the beholder—the attitude summed up in ne phrase *"plus ça change, plus c'est la même chose."* It has all appened before; it seems new only because it has happened to us. The other is the habit of accepting change too uncritically: of building up a zephyr into a hurricane, of calling a fad a revolution, of ccepting all change as permanent and significant and thereby forgetting that life tends to repeat itself and that human events, like atural ones, move in cycles.

Obviously, the American temperament makes us more prone to all into the second trap. Pessimism, faith in permanence, and orld-weariness have never been our style. But then, change has een the central fact of the whole American experience. As Daniel ell has written: "The United States is probably the first large ociety in history to have change and innovation 'built into' its ulture."

In fact, we are probably the first nation in history in which adocacy of things as they are is automatically and permanently a efensive position: we unhesitatingly equate change with progress. We want change. We want progress . . . and we aim to get it," said resident Johnson in a 1965 speech, treating the two words as synnymous. At our most conservative, we allow ourselves to be rueful nd resigned about change. Even when we go in for pickling our ast, as we have been doing more and more in recent years, there anages to be an aura of advance about the movement; anyone ho has visited Colonial Williamsburg will have to admit that it is ne damndest, most up-to-date restoration of the past he ever saw.

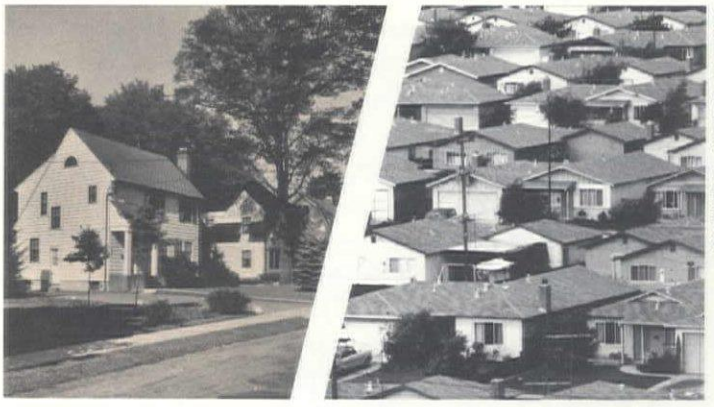
Change is the biggest story in the world today and we re not covering it adequately," said James Reston of *The New ork Times* in an address at Columbia University in 1963. But hange, from a strict journalistic point of view, is more than the iggest story; indeed, the word defines news. "What's new?" we ask ach other ritually, and there is generally a ready answer at hand. ournalism, with its vested interest in change, has become enorously more pervasive and influential in the nation over the past venty-five years, mainly because of television, and perhaps this inuence has been felt in the form of an increased national conviction hat we are transforming ourselves in a way that has never happened efore. But sober historians have joined enthusiastic journalists in aking the point. In 1962, for example, the members of the American istorical Association listened to a paper delivered by their presient, Carl Bridenbaugh, in which he called into question the very elevance of past history to contemporary events, so drastic did he onsider what he called "the great mutation" of this century.

Not surprisingly, such sweeping statements have evoked a counerattack. Some American historians still insist that the past is as elevant as it ever was; that change in our time differs only in degree nd not in kind from change in the past; and that the fault lies in he change-intoxicated historians, who have themselves remained o inflexible in their thinking as to be unable to see the matter in erspective. "A sense of remoteness from a precious cultural herage," Elizabeth L. Eisenstein points out, has been a familiar emoon all through the ages, back to the lamentations of the Old estament prophets; the late Roman Empire was as concerned about the possible extinction of its civilization as we are of ours; while "the recurrent sense of standing on the threshold of a new age" has marked each generation in turn since about 1800. In our wild and dangerous times, the thought that everything is basically *"la même chose"* is reassuring, and at the least it may serve as a corrective to overenthusiasm. But the evidence is overwhelming that the winds of change *do* blow more strongly now, and that America in recent years has been a kind of Cave of the Winds.

What was America really like in 1939?

For one thing, although the depression might be on its way out, its remnants were still to be seen everywhere. Unemployment had crept downward year by year from the 1933 high of nearly thirteen million persons, or a quarter of the labor force; nevertheless, it still stood at nine and a half million, or 17 per cent of the labor force, and wretched tar-paper shacks were still to be seen under bridges and on similar scraps of public land. One day that February, two hundred and thirty-nine women, ranging from recent college graduates to gray-haired matrons, showed up at the Armory on Four-

Suburban "Colonial"



JOE MUNROE—PHOTO RESEARCHERS

Subdivided Colony

teenth Street in New York City in response to an ad for twelve laboratory helpers at $960 a year; the women arrived twenty-four hours early, and were fully prepared to stay in line on the sidewalk through a midwinter night, although a compassionate and worried management eventually let them move inside to wait. Works Progress Administration rolls varied during the year from 1.7 million to 2.9 million persons. Strikes accompanied by violence were still a familiar part of the national scene, and it was in 1939 that the city of Flint, Michigan, headquarters for Chevrolet, got around to passing an ordinance to protect workers from intimidation inside or outside local plants. The average farm family, which had an annual income of around a thousand dollars, kept expenses down through participation in one or more of the 10,700 farm co-operatives, which had membership of three and a third million persons and aggregate annual sales of two billion dollars. The plight of the sharecroppers of the South and West, which was brought home to the whole country that year with the publication of John Steinbeck's novel *The Grapes of Wrath*, was still acute; in New Madrid, Missouri, a thousand tenant farmers deliberately encamped outdoors that January, and remained there through a brutal snowstorm, to dramatize sharecropper poverty. Others, of course, were doing a good deal better. In April the Treasury announced to Congress that

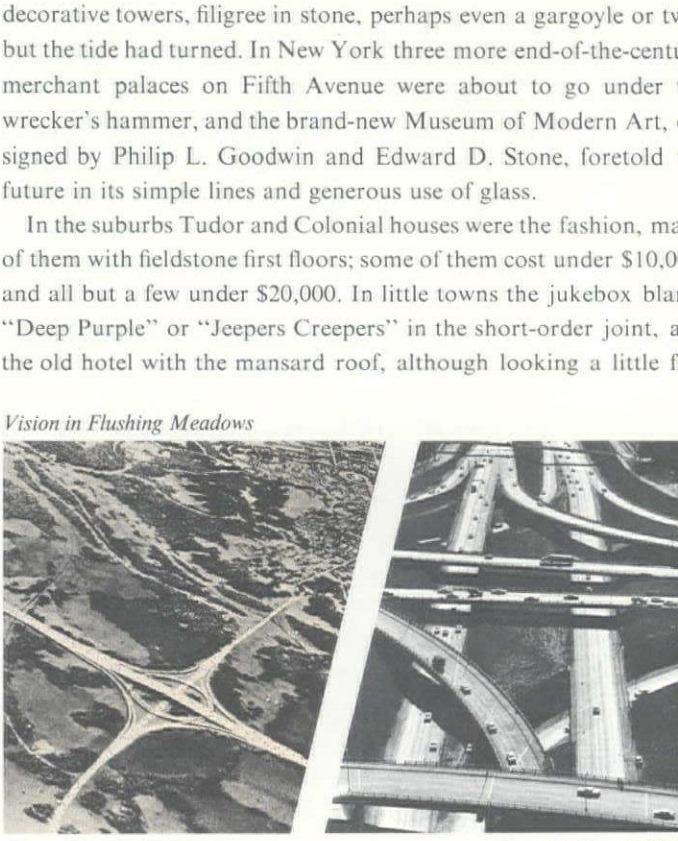
in 1937, the most recent year for which figures were available, Louis B. Mayer of Metro-Goldwyn-Mayer had been paid $1,161,753; Major Edward Bowes, impresario of the Amateur Hour on radio ("All right! All right!"), $427,817; Thomas J. Watson of International Business Machines, $419,398; and George Washington Hill of the American Tobacco Company, $380,976—all at low tax rates.

The social and political attitudes that had arisen out of the depression were still firmly in control of the national mind. There were, as John Dos Passos had written, two Americas: the capitalistic one that saw the solution to its problems in low wages and repression of labor's demands, and the rising liberal-and-labor faction ever pressing for higher wages, better working conditions, and improved social legislation. What the two had in common was that they were both reacting to the conditions of the depression. For the businessmen and factory hands alike, as Robert S. and H. M. Lynd wrote in *Middletown*, "The experience [of the depression] had been more nearly universal than any prolonged recent emotional experience in the city's history; it had approached in its elemental shock the primary experience of birth and death." Federal social security itself was something new; it had not existed before 1935, and up until 1939, when benefits were extended to include dependents, no one had been covered but the worker himself. Politically, it was still the era of the popular front embracing Communism and liberalism—or was until August of 1939, when the Nazi-Soviet pact was to bring abrupt disillusionment to masses of American liberals and open the chasm between them and Communism that has been there ever since. In 1939 college students in many parts of the country still sang "Peat-Bog Soldiers" and "Freiheit" in romantic tribute to an already lost cause, that of the Spanish Loyalists (Barcelona fell that January, and the Loyalists surrendered to Franco in March). Communists, albeit probably in rather small numbers, dominated certain large and powerful labor organizations like the National Maritime Union; some of Hollywood's leading writers were Communists, although, as Murray Kempton has pointed out, most of the scripts they turned out would have been found unexceptionable by the Daughters of the American Revolution; and there were Communists or fellow travelers employed in the federal government, probably mostly at its lower levels. (A friend of mine was working in a government agency in California in 1939, until one day he was abruptly fired after having expressed anti-Communist sentiments to his fellow employees. He learned later that the division he was working in was a Communist cell, and that the man who had hired him had done so in the mistaken belief that he was a Party member.) Earl Browder, general secretary of the Communist Party in the United States, claimed in 1939 that his organization had one hundred thousand members, although other sources estimated the figure was much lower. At the other end of the political spectrum, Fritz Kuhn claimed that his Nazi-oriented German-American Bund had twenty thousand members.

America's cities were already jammed with cars and its landscape defaced with billboards in 1939, but in other ways things looked a good deal different from the way they look now. New urban building, which had gone through a fantastic boom during the twenties, had been at a virtual standstill for a decade, so the nation's cities had a certain look of faded splendor. Now, though, a small crop new buildings were beginning to appear, many of them pioneeri low-cost housing projects; with their unadorned rectilinear plan they anticipated the joyless boxes that were to be a feature of postwar period. Some new buildings, such as a high-rise apartme house under construction on New York City's Riverside Drive, re resented the last gasp of the elegant past, with such elaborations decorative towers, filigree in stone, perhaps even a gargoyle or tw but the tide had turned. In New York three more end-of-the-centu merchant palaces on Fifth Avenue were about to go under wrecker's hammer, and the brand-new Museum of Modern Art, signed by Philip L. Goodwin and Edward D. Stone, foretold future in its simple lines and generous use of glass.

In the suburbs Tudor and Colonial houses were the fashion, ma of them with fieldstone first floors; some of them cost under $10,0 and all but a few under $20,000. In little towns the jukebox blar "Deep Purple" or "Jeepers Creepers" in the short-order joint, a the old hotel with the mansard roof, although looking a little f

Vision in Flushing Meadows



Reality in Det

lorn, still stood near the railroad station. In the countryside, ro of tiny "tourist cabins," shedding paint and heated with kerose stoves, were the forerunners of the Neronian motels of today.

In 1939 Italian hand organs were still heard in the streets American cities, and Yiddish-language movies were still made a shown. The cities and even the towns, with their Little Italies a Little Dublins, had a certain European flavor that has been lost. T great waves of European immigration that had rolled westwa across the Atlantic in the early years of the century were definit over—during the thirties the combined effects of earlier restrict legislation and the depression had slowed immigration from a flo to a trickle and finally to a drip—but one American in four v either foreign-born or of foreign parentage. Nevertheless, such astute observer as Bruce Bliven could still affirm that the Uni States was firmly dominated by the Anglo-Saxon Protestant fou most characteristically in the small towns of the Midwest, wh religious tolerance was such that he could get along with any m so long as that man *had* a religion—that is, wasn't an atheist—a whose political tolerance could be extended to any Republican Democrat but less easily, if at all, to a Socialist or Communist. T prototypal American of 1939 was probably a businessman; he v a booster of his town and his country, but was beginning to ha

erious doubts about perpetual progress ("One senses a growing and isturbed feeling that perhaps, after all, everything is not going to e bigger and better forevermore," Bliven wrote); he had the traditional American passion for self-improvement; and, of course, he ften had his business troubles (business failures that year ran at rate of seventy per ten thousand concerns, the highest since 1933). le certainly felt contemptuous toward that European and metropolitan institution, Society—which, nevertheless, was still influenal enough so that the Sunday editions of metropolitan papers evoted a separate section to it and self-assured enough so that its ebutantes and young matrons were often photographed on the ront page of that section in bathing suits. The glamour girl of the ear was the glamour girl of *any* year, the coy yet queenly Brenda Diana Duff Frazier.

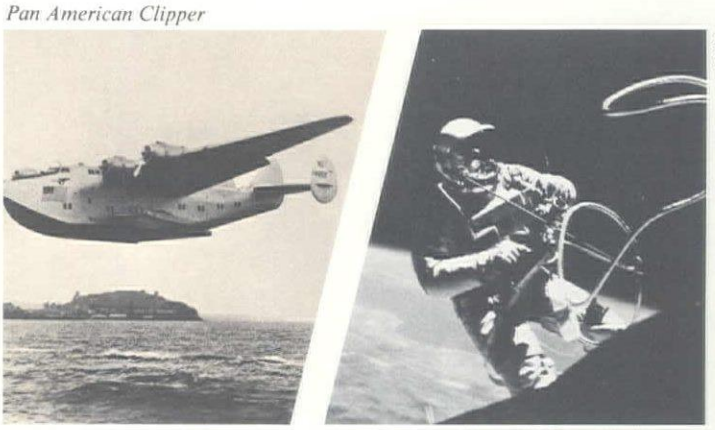
Among books the great critical and public success of the year was *The Grapes of Wrath*, which perhaps still stands as the culminating ocial record of the decade. Among the hits of the Broadway theatre ere *Abe Lincoln in Illinois*, *The Man Who Came to Dinner*, *The hiladelphia Story*, and *Hellzapoppin'*. But the really big media of opular entertainment were radio and the movies, which, having not et encountered their postwar nemesis, television, were having a olden age—in the financial sense, anyhow. The number of radio ets in use in the nation was one of the few statistics that had risen eadily and inexorably all through the depression. In effect all but ose living in the direst poverty or those possessed of heroic cultural perversity now had at least one radio. What did they have to sten to? Because of international events, 1939 was the year when adio news coverage really came into its own, and millions sat anxusly straining to understand broadcasts from Europe, above the ush of static and interference. But the most popular programs were rama and variety shows, and the most popular program of all was e Chase and Sanborn Coffee Hour. All over the country, even in e most remote farm areas, young and old alike tuned it in to keep with that odd phenomenon, an invisible ventriloquist. Edgar ergen's perky, irreverent puppet, Charlie McCarthy, was quite ossibly the most widely known figure in American show business to that time. Daytime radio programming was a simple matter—ap operas took up 85 per cent of network time, as against 3½ per nt for news; it was clear enough that the millions of wives who pt the radio blaring while they cleaned house would rather keep with Ma Perkins than with the fall of Europe.

he year 1939 saw "Gone with the Wind" which many eople still consider the movie to end all movies. And it witnessed a od deal else in the motion-picture field. With an investment of two llion dollars and 282,000 persons regularly employed in it at the art of the year, the industry in 1939 turned out five hundred and irty feature films and more than seven hundred short subjects. ighty-five million Americans, or 65 per cent of the total population all ages, went to the movies at least once a week. The movies rmed the country's image, abroad and to a great extent at home. veryone knows that it was a distorted image that did us harm in e world and probably continues to do us harm, but many of the ovies of 1939, taken in their own terms, were remarkable achievents of popular entertainment. If anyone doubts the depth and breadth of the country's acceptance of the movies as a cultural asset in 1939, let him remember that it was the year when the Los Angeles Museum of History, Science, and Art proudly accepted for its collection the sarong worn by Dorothy Lamour in *Her Jungle Love*.

What with cars and the beginnings—however rudimentary they look now—of mass industrialization and urbanization, the traditional basic American unit, the family, was showing signs of changing or breaking up. Concern for the delicate psyches of the young and permissiveness in the school and the home, notions to which the middle class of the twenties had paid aggressive lip service but not much more, were now the rule in practice—and the first signs of a backlash were appearing.

Meanwhile, the long-established American custom of discriminating against people on the basis of religion and race remained firmly entrenched. Anti-Semitism was at a kind of flood tide—and by no means just among members of organizations with foreign connections, like Fritz Kuhn's Bund. As to discrimination against the country's twelve and a half million Negroes, it is startling now to realize

Pan American Clipper



NASA

Major White walks in space

that the whole humanitarian New Deal movement of the thirties had left it virtually untouched. In February, 1939, the National Association for the Advancement of Colored People, whose very existence most white Americans were certainly unaware of at the time, celebrated its thirtieth anniversary by holding dances in cities throughout the country. But there was little enough to dance about. Not a school in the deep South was integrated; hardly an industrial plant anywhere in the country did not discriminate against Negroes, consciously or not, in one way or another; hardly a leading hotel or restaurant anywhere in the country did more than make a gesture toward nondiscrimination by occasionally admitting a Negro celebrity. It would be two more years before the federal government would take its first step since Reconstruction to correct inequities based on race or religion. From Amos 'n' Andy on radio to the grinning waiters and fat maids in the movies, the old stereotype of the Negro was unabashedly shown in all the mirrors of national opinion and taste: he was amiable, obliging, musical, subservient, sometimes perhaps allowed to outwit his employer with his earthy "native" shrewdness—but always in his place. A Mrs. Roosevelt might be widely applauded for quitting the D.A.R. because it refused to let Marion Anderson give a concert in Constitution Hall in Washington, but that case involved the first lady of the country and a leading

artist. (Meanwhile, the President was having no success in getting an anti-lynching bill through Congress.) Ordinary people, even intelligent and high-principled ones, seldom felt more than an occasional twinge of guilt about America's treatment of its Negro minority. For one thing, they had economic troubles of their own arising out of the depression, and for another, all but a few still sincerely believed in the Negro's inferiority.

In making this sketch of the country in 1939, I have avoided until now putting in the great shadow that lay across it—the shadow of war in Europe. To begin with, our attitude, even toward our friends in Europe, was still to a remarkable degree the suspicious, truculent, defensive one that Mrs. Trollope had remarked on a century earlier. But now Europe was coming to be dominated by those who were clearly not our friends. The previous year, the Nazi conquest of Austria and the partition of Czechoslovakia had given a clue to Hitler's intentions, and now came one crushing blow after another: the dissolution of the Czech republic, the occupation of Bohemia and Moravia, the annexation of Memel, the threats to Danzig, the Nazi-Soviet nonaggression treaty. The spirit of the whole Western alliance in the months preceding September 1, 1939, when Germany marched on Poland and started the Second World War, was perhaps never better summed up than in a plea for peace addressed to the German government by eighteen noted Britishers in January: "A spirit of uneasiness broods over the world. Men and women in every country are uncertain what the next weeks and months may bring." To be sure, war seemed a good deal farther away to the United States, with three thousand miles of ocean separating it from Europe, than it did to Britain. We had our Neutrality Act to keep us out of foreign squabbles, and we had a young generation brought up on antiwar attitudes arising out of the First World War, and embodied in plays like *What Price Glory?* and novels like *Three Soldiers* (two years earlier, in 1937, an estimated half a million American students had taken part in a student strike against war). But the fact remains that the shadow of war in Europe did fall heavily over the country in 1939. It stifled optimism and shortened perspective; it discouraged a forward view. In May, real-estate men gathered in New York complained to each other that fear of war was "killing deals."

If David L. Cohn was right in his thesis that the year-by-year contents of the Sears, Roebuck catalogue faithfully reflect American moods, then a flourish or two may be added to the sketch of 1939 by taking a look into the editions of that year. Among many other things, the 1939 spring number shows beautiful new horse-drawn farm wagons; windmills for $29.95 and up; a great number of objects called "refrigerators," although we would now call some of them iceboxes; and a number of washing machines run by gasoline. The boys shown in the catalogue are usually wearing knickers; the men are wearing trousers so wide at the cuff that they now look ridiculous; and the heels of the women's shoes are so broad and low that they look as if they could actually be walked on without teetering, such was the practical wisdom of fashion in those primitive times.

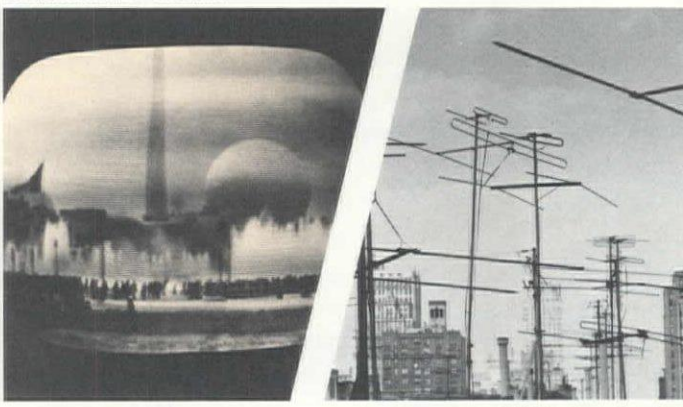
Finally, 1939 was the year when college boys took up the fad of eating goldfish in huge quantities; it was the year when zippers became practically standard equipment on men's trousers; and it w
a year when women averaged five feet five inches in height (less th
now) and one hundred and twenty pounds in weight (more than now

In retrospect, it is surprising how many truly important develo
ments, which have made obvious marks on the country and the re
of the world since then, had their beginnings in 1939.

To take the most spectacular example, it was late that Janua
that the atomic age really began. As Henry DeWolf Smyth tells t
story in *Atomic Energy for Military Purposes*:

On January 16, 1939, Niels Bohr of Copenhagen, Denmark, arrived in t
country to spend several months in Princeton, N. J., and was particula
anxious to discuss some abstract problems with Einstein. . . . Just bef
Bohr left Denmark two of his colleagues, O. R. Frisch and L. Meitner (bo
refugees from Germany), had told him their guess that the absorption o
neutron by a uranium nucleus sometimes caused that nucleus to split in
approximately equal parts with the release of enormous quantities of ener
. . . Immediately on arrival in the United States, Bohr communicated t
idea to his former student J. A. Wheeler and others at Princeton, and fr

A thousand view an event



Millions get the pict

them the news spread by word of mouth to neighboring physicists includ
E. Fermi at Columbia University. As a result of conversation among Fer
J. R. Dunning, and G. B. Pegram, a search was undertaken at Colum
for the heavy pulses of ionization that would be expected from the fly
fragments of the uranium nucleus. On January 26, 1939, there was a co
ference on theoretical physics at Washington, D.C. . . . Before the meet
in Washington was over, several other experiments to confirm fission h
been initiated, and positive experimental confirmation was reported fr
four laboratories . . . in the February 15, 1939, issue of the *Physical Revi*
By this time Bohr had heard that similar experiments had been made in
laboratory in Copenhagen about January 15.

The news of this cornucopia of nearly simultaneous developme
certainly did not stir up the uncomprehending public; the report
The New York Times appeared on an inside page and went unnotic
by laymen. The first approach of physicists to the United States go
ernment was made by Pegram that March, and during the summ
Einstein wrote his famous letter to President Roosevelt explaini
the desirability of encouraging work in the field of atomic fissio
the President appointed an Advisory Committee on Uranium, a
the committee, meeting in October, recommended as a first step t
procurement of large quantities of graphite and uranium oxide
be used in further experiments. The first transfer of federal fun

to carry out the recommendation was to be made early in 1940.

At the same time the shrinking of the world by international air travel was just getting under way. In 1939 the United States had eighteen domestic air-carrier companies using 276 aircraft, and the annual number of airline passenger fares paid had just passed the million mark; financially, the carriers were beginning to show a slight profit after years of operating consistently in the red. There was no overseas service for either passengers or mail. But now the horizons of commercial aviation began to widen rapidly: in May, the Yankee Clipper, a great, four-engine flying boat, successfully inaugurated the first regular North Atlantic air service, going from Port Washington, Long Island, to Lisbon in twenty-six and a half hours, with a stopover at the Azores; it carried a crew of fourteen and a shipment of mail, but no paying passengers. Passenger service was not long in coming, though; Pan American began it in June, on a once-a-week basis. One left Long Island at 3 P.M. on Wednesday and could have dinner in Lisbon on Thursday evening, continuing on to Marseilles the next morning. The fare was $375 one way, the free baggage allowance was fifty-five pounds, and the inside of the plane looked a good deal like a musty old Pullman car. Within a matter of weeks, transatlantic passenger service came to be considered almost a routine thing. That fall, aviation got a huge boost with the opening of the latest thing in airports, New York City's LaGuardia Field.

Cars were in the process of transition from Tin Lizzies to what John Keats was later to call "insolent chariots." The new Lincoln Zephyr "coupé"—a word now long vanished from teenagers' vocabularies—had a wonderful new appointment, a convertible top that could be raised or lowered at the touch of a button. The 1940 Oldsmobile, put on the market in the fall of 1939, had as a $57 extra something called a hydraulic clutch, which was an early version of automatic transmission. Fluorescent lighting was introduced in 1939, and so were nylon stockings, although the latter were not to be in regular production until a year later. In the field of book publishing the seeds were sown of a revolution that was to have a wide cultural impact when a new firm called Pocket Books began issuing paper-backed reprints of popular titles for twenty-five cents each. It was in 1939 that reports were published in the United States of an Argentinian researcher's discovery that he could produce cancer in rabbits by painting them with tobacco extracts. But hardly anyone paid the reports any attention.

And then there was television. The idea of "seeing by telegraph" had engrossed inventors for many years, and as early as 1884 a German named Paul Nipkow had taken out a patent on a method of television transmission. It did not work, and neither did many subsequent efforts, but during the thirties, while radio was making millions, television was finally perfected in the laboratory. However, at the beginning of 1939 there was no such thing as public television. It was introduced on April 30 with a telecast by the National Broadcasting Company of the ceremonies opening the New York World's Fair at Flushing Meadows, which was picked up by between one and two hundred experimental receivers set up in public places around New York and was seen by an estimated one thousand viewers. The program was generally considered a success, despite the tiny pictures, which measured less than ten inches across, but it was an isolated test. Regular programs were not to come until after the end of the war.

As to the prospects for commercial television, informed views on the subject differed widely in 1939. Du Mont Television Receivers, Inc., said ebulliently in its advertisements for the Fair broadcast, "Sooner than you realize it [television] will play a vital part in the life of the average American." But the more skeptical Television Committee of the Federal Communications Commission felt that the day when television would be commercially feasible might still be far in the future. Chester L. Dawes, a Harvard professor of electrical engineering, was afraid that the conditions imposed on both viewer and performer by television's nature would tend to limit its popularity permanently. "Television-viewing is limited to a few persons, it must take place in a semi-darkened room and demands continuous attention," Dawes wrote. In hindsight it would appear that Dawes underestimated the traditional ability of Americans to endure the hardships of pioneering.

Goldfish at Harvard



Protest at Berkeley

At this point a selection of comparative statistics may serve to give some impression of the magnitude of the change since 1939. The percentage of Americans who live in places classified by the Census Bureau as urban went from 56.5 per cent in 1940 to just under 70 per cent in 1960, and it has since approached the three-quarter mark. Over the same period, housing units without bathtub or shower went down from roughly 40 per cent to roughly 12 per cent. Even so, we still have more radios than bathtubs; only 8.5 per cent of housing units were without radios at the time of the 1960 census, and the percentage without television sets was almost the same as the no-bathtub-or-shower figure. By 1964 the average weekly wage for production workers in manufacturing was just over a hundred dollars for slightly more than forty hours' work—more than a quadrupling of gross weekly income since 1939. (Over the same period the Labor Department's price index of all commodities went from 42 to 100, meaning that what cost forty-two cents in 1939 cost a dollar in 1964, and that in terms of buying power the production worker's raise over the quarter-century only doubled.)

The tremendous advances in the treatment of bacterial disease are reflected in the fact that influenza and pneumonia, which were running practically neck and neck with cancer as a cause of death in 1939, by 1962 caused only one death to every 4.7 for cancer and

every eighteen for cardiovascular disease. The advances in public education are demonstrated by the fact that the average American today completed twelve years of school rather than eight. The trend toward a universal middle class is dramatically shown by the facts that about 40 per cent of American families now have annual incomes above $7,000, and that more than 40 per cent of all American youngsters of eighteen and nineteen are now attending college.

Only one in six of us is foreign-born or of foreign parentage today, and the distribution of the foreign-born has changed—Germany and Ireland are down since prewar days, while Italy, the Netherlands, Hungary, and Yugoslavia are up. Our median age has hardly changed at all—it was 29 years in 1940 and 29.5 in 1960—because increasing longevity has been balanced by a huge crop of postwar babies. The geographical center of our population has continued a long-established slow trek westward, retracing, with a curious statistical mimicry, the trek of the pioneers in the last century; from just east of Carlisle, Indiana, in 1940, in twenty years it has pushed on some ninety miles to a point just east of Salem, Illinois, in 1960.

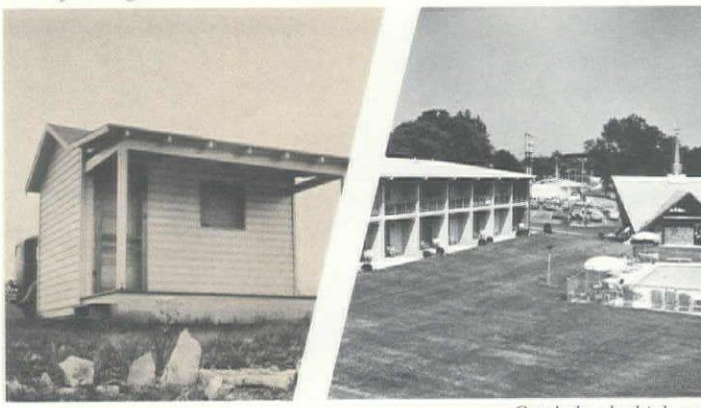
Unemployment has, of course, come down from the crisis level of 1939, although it remains among our most serious problems, for reasons having to do chiefly with new technological advances and rapid expansion of the working force. In the early sixties it hovered stubbornly around 5 per cent of the labor force, which still meant that more than four million Americans who wanted jobs didn't have them. Meanwhile, economic security from sources other than jobs made huge advances. Social welfare expenditures by the federal government, states, and localities went from $8.766 billion in 1940 to $66.5 billion in 1963. Life insurance in force in 1939 was at the seemingly fantastic figure of $111 billion, having tripled in the preceding two decades; now it stands at about $800 billion. The number of individual owners of common stock has risen from three or four million in 1939 to more than twenty million today, of whom more than eight million are persons with annual incomes of less than $7,500; indeed, the idea of "people's capitalism" has become so popular that some commentators have recently been proposing universal stock ownership, to be made possible through federal credit, as an answer to the unemployment problem. If people can't find jobs with companies, maybe, it is suggested, they can make a living by owning them instead!

The nine-billion-dollar federal budget of 1939, as almost everyone knows, has grown to one hundred billion dollars, give or take a few billion, and most of the money comes from personal and corporate income taxes, which between them brought in somewhat over two billion dollars in 1939, and about seventy-five billion in 1963. (The number of taxpayers contributing to the federal take meanwhile rose from less than four million in 1939 to more than fifty million in 1963.) About half this money went for national defense expenditures—that is, around fifty billion a year as against somewhat over one billion in 1939. The much-talked-of expansion of the federal government has been many times more modest in terms of manpower: we had 1,128,000 federal civilian employees in 1940 and 2,528,000 in 1963. Economically, in short, we have become a different country.

The nation's top salaries are about what they were in 1939—bu their recipients are far more apt to be corporate officials now tha show-business celebrities, who take their returns in capital gain when they can; as for the big businessmen, they too have to fin ways of keeping as much of the money as possible out of Uncl Sam's hands—an effort that has siphoned off a good deal of ou national energy and talent in recent years. The roll of America Communists has, over the quarter-century, apparently shrunk t near the vanishing point. The number of persons engaged in distri bution and service in the motion-picture industry has droppe 70 per cent in a little more than a decade, while the number of tele vision sets in use was rising from virtually none in 1945 to 56,400,00 in 1963.

What view did the Americans of 1939 have of our future as a na tion? I have already noted that they expected little further economi expansion, but in fact our gross national product and national in come were to become almost seven times greater in the next quarter century, and the price of all commodities was hardly more tha

Cabin for a night



Castle by the highwa

doubling. They also expected an end to national population growth more specifically, in 1939 an officer of the Census Bureau predicte that our population would reach a peak of 136,000,000 in 1940 an then begin a long, gradual decline that would bring it down t 126,000,000 by 1980. The 136,000,000 was reached, all right, bu it was no peak; at present, assuming a continuation of the curren birth rate, our estimated population will be 260,000,000 by 1980. would be hard to imagine two predictions by qualified experts tha have turned out to be more flatly wrong.

Insight into the horizons of the 1939 American may perhaps b acquired by looking at his view of the future of a favorite America artifact, then as now—the automobile. At a meeting of the Worl Automotive Engineering Congress that spring in New York, a lea ing engineer, Edwin L. Allen, predicted that the American car the future would be built in the shape of a teardrop, with the poi at the rear. "In the not too distant future," Allen said, "we wi walk up to our car, push a button, and the door will open. We wi have the impression of entering a commodious room. It will not b necessary to crawl over stationary seats and trip over pumps an tunnels in the floor. The seats will be light, movable chairs and th floor will be wide and flat. A portion of the roof will be made of curved translucent material which will admit the health-giving ra

of the sun and at the same time remove glare." At the same congress, another engineer confidently, and quite correctly, predicted that the running board was on the way out. Does it all sound rather naïve? Could anyone be expected to know that a postwar vogue, almost totally irrational, for low cars would make a mockery of the dream of a "commodious room"? Could anyone be expected to know that within about fifteen years the manufacturers of automobiles would be making psychological studies of the symbolic meaning of cars to their owners, and that the designers would be aiming not so much to achieve maximum comfort, safety, or even speed as to project the right "image" in terms of sex and status? Seldom, perhaps, in its long history, has crystal gazing been shown so graphically to be an undertaking in which knowledge and logic are powerless.

The great clearinghouse for 1939 projections of the future was, of course, the New York World's Fair, the theme of which was "The World of Tomorrow." President Johnson, speaking at the opening ceremonies of the more recent New York World's Fair in April, 1964, commented on how the reality of change over the preceding quarter-century had outstripped the vision as it was embodied in the 1939 Fair; he pointed out in particular that there had been "no mention of outer space, or atomic power, or wonder drugs that could destroy disease." How, then, *did* the "world of tomorrow" look to those who were trying to envisage it in 1939?

As a matter of fact, there were at the 1939 Fair certain portents, however dim, of the true shape of things to come. The Hall of Medical Science featured an exhibit designed to show that man was not helpless against infection, but its emphasis was on natural and acquired immunity rather than on the destruction of bacteria in the body by drugs. A mechanical heart, built by that versatile and unpredictable national hero, Colonel Charles A. Lindbergh, for Dr. Alexis Carrel, perhaps offered a faint hint of the coming development of a heart-lung machine such as now makes possible open-heart surgery. And there *was* mention of space, if not "outer" space; in the Theatre of Time and Space, a motion picture showed an imaginary rocket-ship flight from New York to London via the "stratosphere," which as every schoolboy now knows, is not really outer space at all but merely the upper regions of the earth's atmosphere. The concepts of orbital flight, and certainly of manned flight to the moon or the other planets, were beyond the imaginings of even the showmen of 1939.

Other exhibitors, their minds apparently a blank when confronted with the possibility of technological advance, seemed to take refuge in sheer size as the way of the future. The National Cash Register Company displayed a cash register of conventional design but seven stories high. The business-systems pavilion featured not a computer but an ordinary typewriter that was eighteen feet long and weighed fourteen tons. Still others seemed to be able to see nothing ahead but greater domestic convenience; a not particularly daring exhibit in the Home Furnishings Building showed a woman of the future ordering a house and furnishings by telephone—something she could have done, at least from the standpoint of technology, perfectly well in 1939.

The most graphic representation of the future, and the most popular exhibit at the Fair, was the General Motors Futurama. Designed by Norman Bel Geddes as his conception of the world of 1960, it was the largest animated scale model ever built, containing 35,000 square feet of miniature highways, cities, towns, and farms, half a million miniature buildings, a million trees, and fifty thousand scale-model vehicles. Doubtless many of the twenty-five million persons who rode through the wonders of the Futurama on a moving platform either gaped in disbelief or considered the whole thing a pleasant fantasy. In fact, some of Bel Geddes's visions have come more or less literally true; some continue to seem unattainable, and some of these now seem undesirable as well; and a surprising number have been surpassed so decisively that they now seem almost absurdly timid. Here were the expressways cutting through cities that, in the years after 1939, were indeed to make cross-country travel so much faster; here was the expansion of suburban living that was indeed to take place on a vast scale; here were the interstate superhighways that were to ruin the railroads in the postwar period. The 100-mile speed limits that the Futurama envisaged have not developed, nor have the 150-story skyscrapers, nor has the segregation of vehicular and pedestrian traffic to separate levels in cities; furthermore, most planners would agree that the Futurama's assumption of the desirability of rigidly dividing cities into residential, commercial, and industrial sections has been emphatically reversed by recent experience. Still, in its vision of the general tone of the future America—bigger, richer, more impersonal, more mechanized, more crowded—the Futurama was a remarkable essay in prophecy. Where it chiefly erred was not in overexuberance but, characteristically for 1939, in nearsightedness. "There are approximately thirty-eight million motor cars in this America of 1960—almost a third more than 1940," the voice in the ears of the Futurama's visitors assured them in awe-struck tones. The figure for the real 1960, when it duly arrived, was seventy-four million.

Amos 'n' Andy in blackface



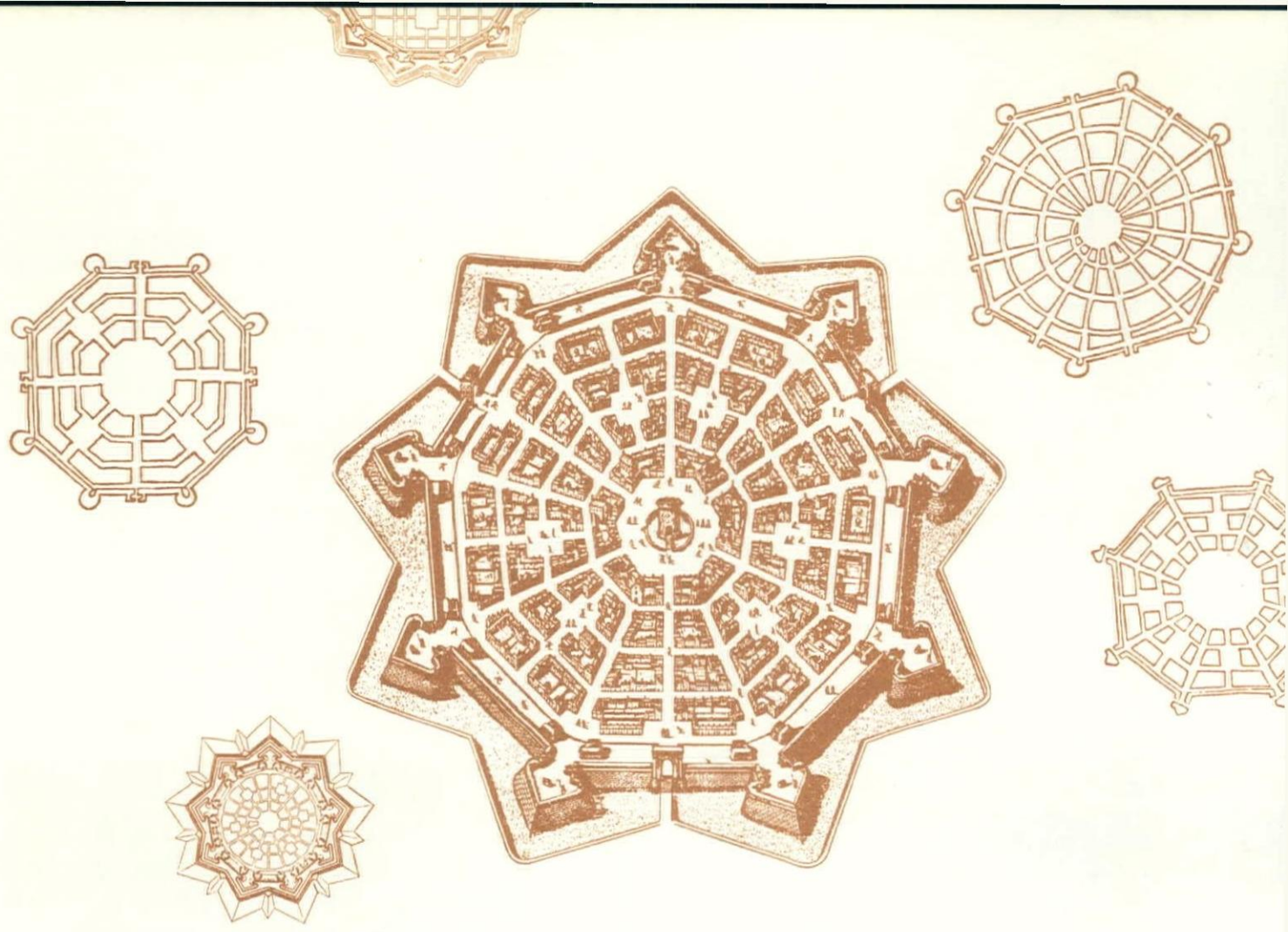
CULVER PICTURES, INC.

N.Y. TIMES—SAM FALK

Dick Gregory in straightface

So the prevision of 1939 was weakened by a depression just behind, and shadowed by a war just ahead. But if some miraculous seer could have overcome these limitations, he would hardly have been acclaimed. If he had been able to show 1939 the real 1960, or 1966, nobody would have believed him.

An expanded version of this article will be the Introduction to John Brooks's history of our own times, The Great Leap: The Past Twenty-five Years in America, *to be published this fall by Harper & Row.*



new designs for megalopolis

BY WENDY BUEHR

With all the wonder-working powers that modern technology has devised, there is a certain macabre humor in the fact that a head of lettuce can travel across an entire continent and arrive at market in better condition than the customer who comes three city blocks to buy it. Life in a twentieth-century city is, in a very real sense, an endurance test. Too many people trying to outwit too few buses, too little air and too much noise, too many pounds of black soot and too few blades of green grass, antiquated plumbing and overpowered autos, blizzards, droughts, buckling pavements, exploding water mains, and faltering power sources: these are the outrageous fortunes of the city dweller, already seven out of ten Americans, and growing more numerous every year.

Everyone complains but most of us accept our sorry lot as inevitable, as if cities had been perfected in the nineteenth century and had now to be suffered as museum pieces. Yet there are a few who do not take this judgment lying down, who in fact believe that what's good for General Motors assembly lines ought to be good for cities, too, and whose eloquent, even Messianic, visions of the city of the future rarely get the attention they deserve.

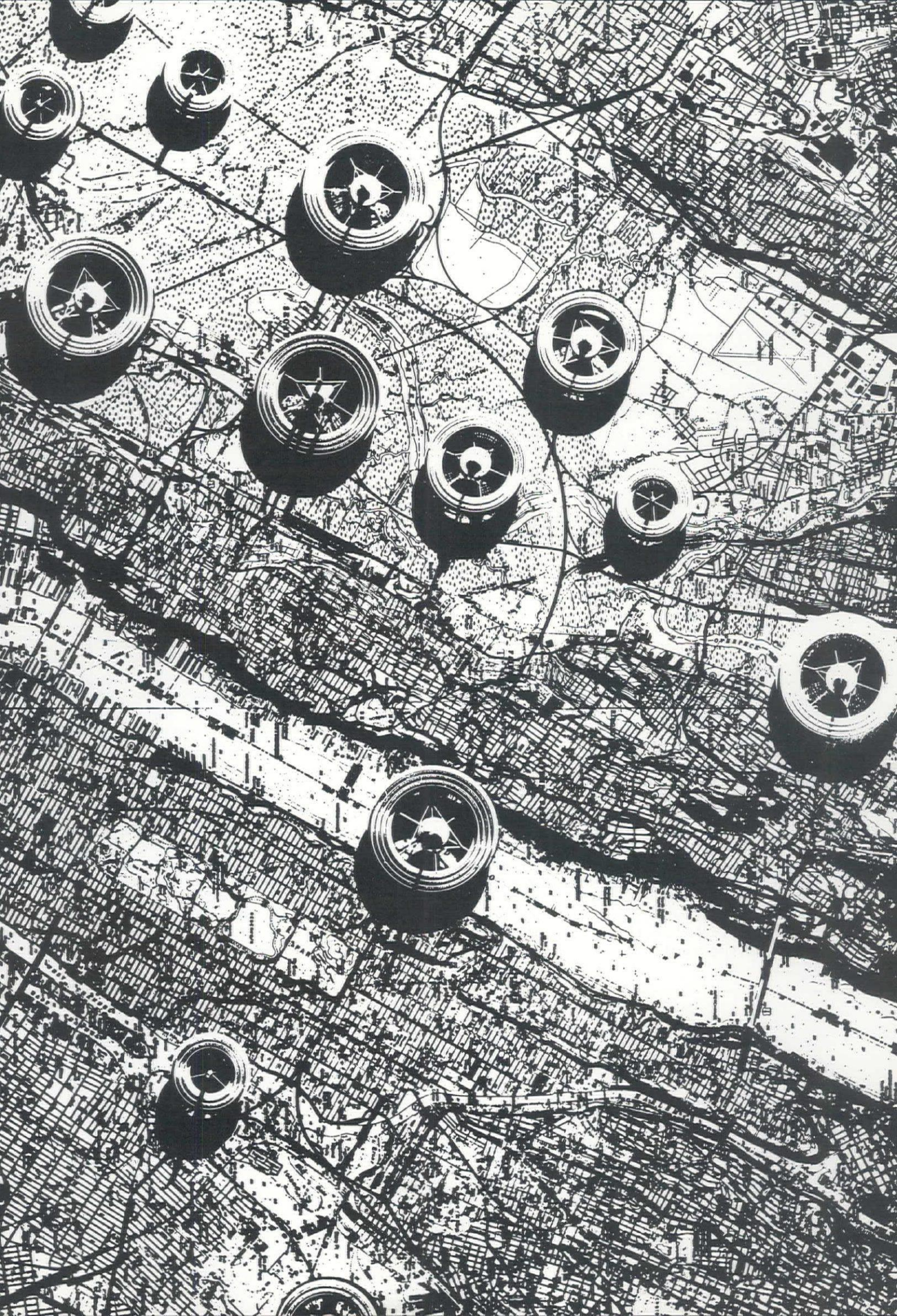
Among the first to protest the anachronisms of the city were the Futurists, a pre-World War I group of artists and architects who declared, "Every generation must make its own city . . . like a tumultuous shipyard, agile, mobile, dynamic in all its parts." A decade later, the terse but sympathetic Le Corbusier complained, "A town is a tool. Towns no longer fulfill this function." A spokesman for the current generation of architect-revolutionaries proclaims, "We are in pursuit of an idea, a new vernacular, something to stand alongside the space capsules, computers, the throw-away packages of an atomic age!"

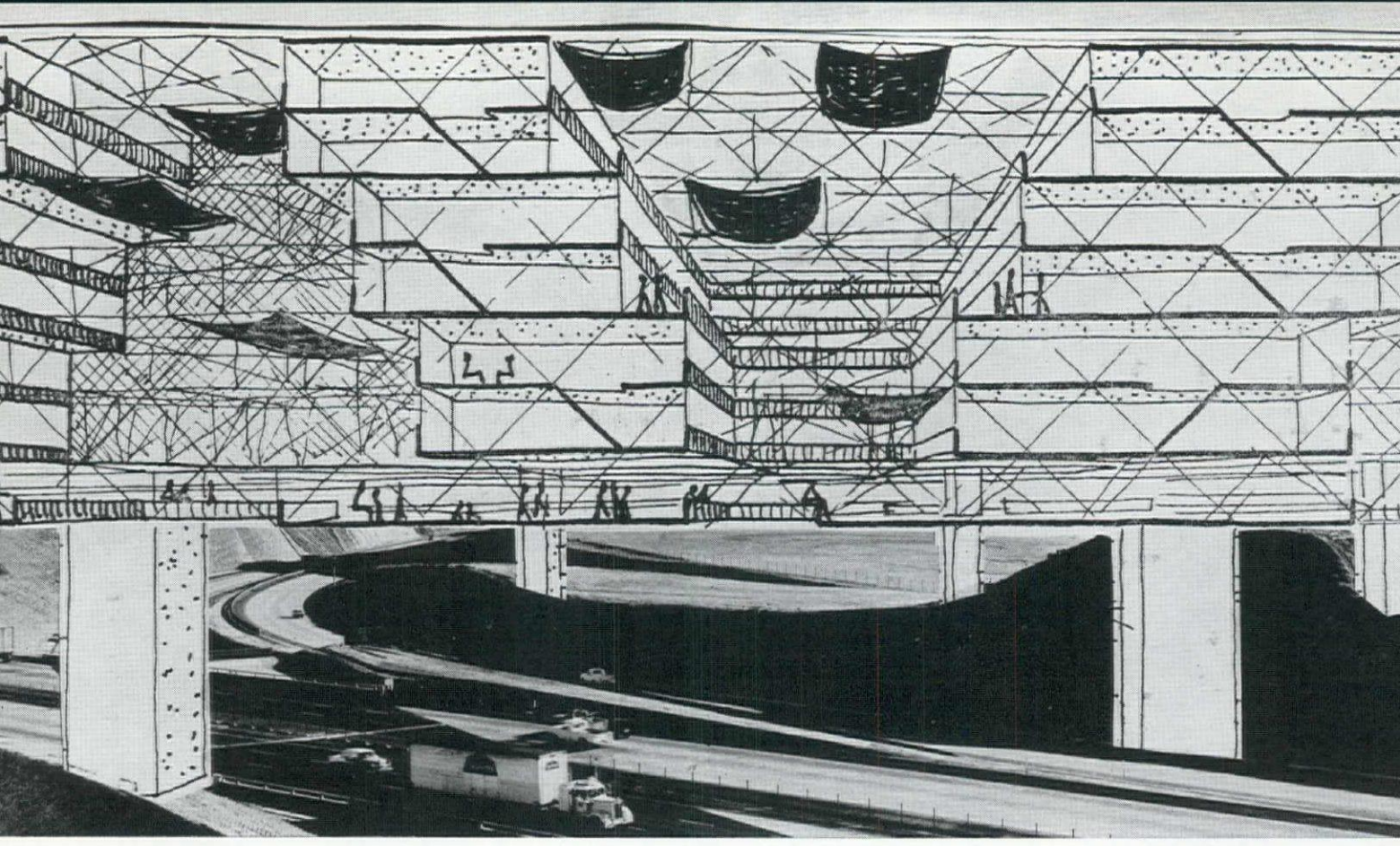
Their suggestions for remaking the environment are not just wishful Utopias of fiction writers; they are serious proposals, based on proved structural principles, and using methods and materials that, if not already available, are consistent with what technology can logically be expected to produce in the near future. Opposite and on the following eight pages we present several of the most provocative ideas of recent years, some from men with established reputations, like Buckminster Fuller and Kenzo Tange, others from designers whose names are so far known only to other professionals.

None of the schemes is intended as a literal blueprint to be followed in the immediate future by some earnest urban planning board, as the tidy Renaissance street plans above were once intended. Rather, it is hoped that "pure" designing will provoke discussion, challenge old assumptions, encourage planners to be more imaginative, and stimulate visionaries in related fields to consider how *else* we might live.

The real point is that man will someday be able to live just about anywhere, and in environments of his own making, if he can alter his prejudices and learn to enjoy, rather than just put up with, the effects of science. And, for those who are already dusting off their "save our landmarks" picket signs again, one reassuring word: none of the designers here assembled wants to raze someone's favorite ziggurat or marble mausoleum. Their main interest is in cities that have not even been begun. The British team of architectural *enfants terribles* goes so far, in fact, as to promise in their manifesto, "We shall not bulldoze Westminster Abbey." But they probably won't build any new abbeys, either.

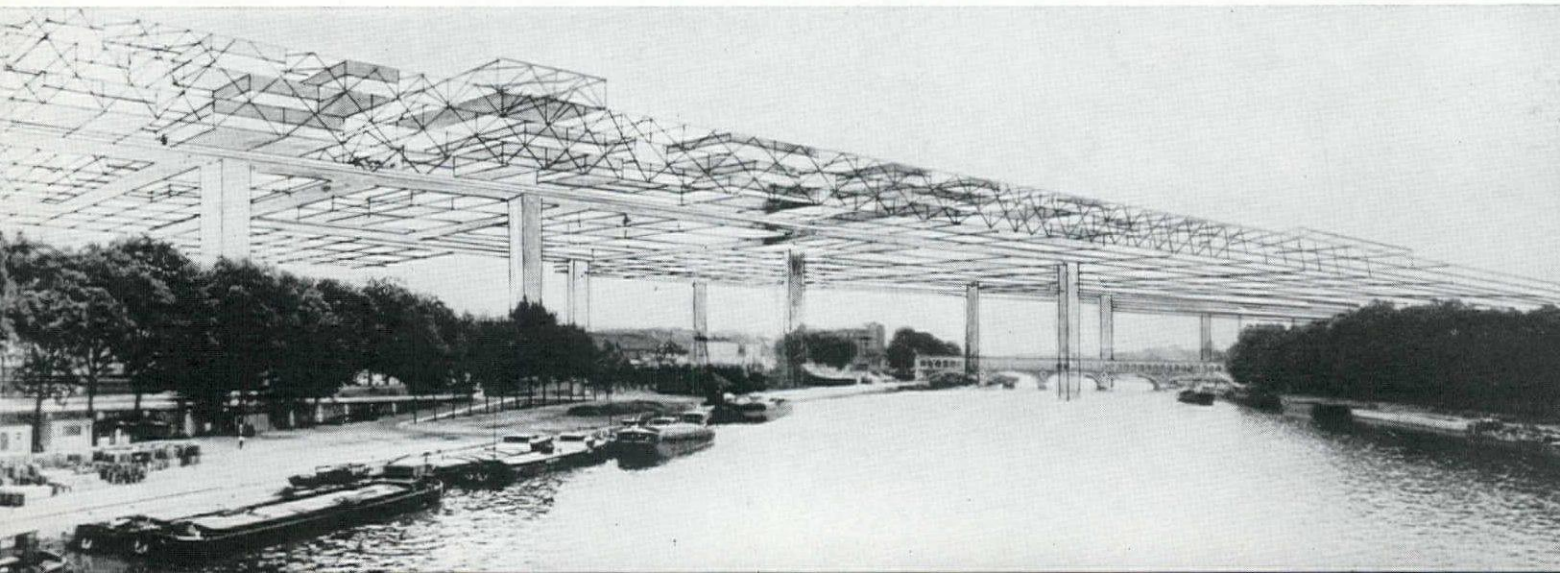
Opposite: James Fitzgibbon's "Bridge Cities," described on pages 60–61

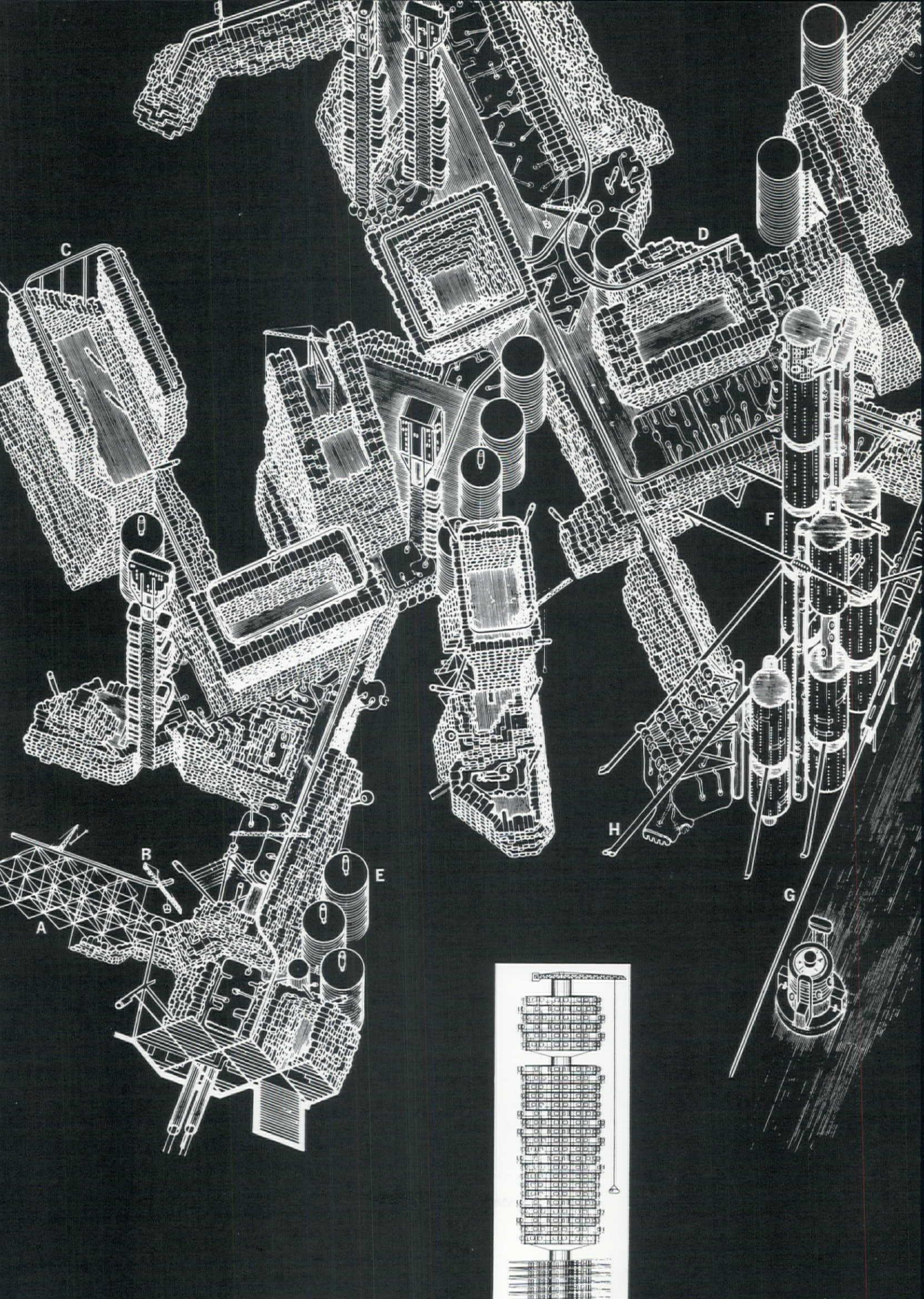


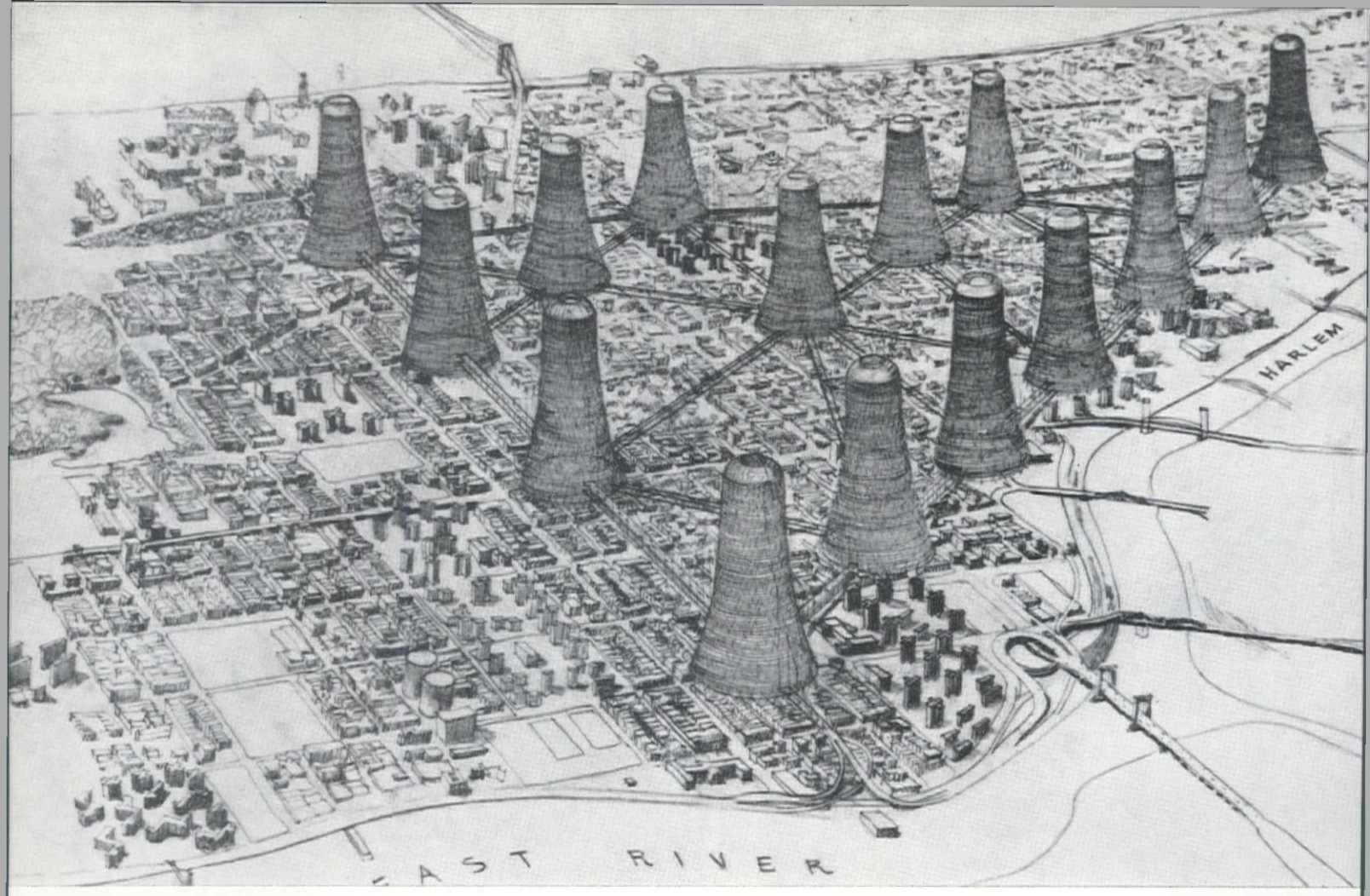


To the old saw about death and taxes, Yona Friedman would add "mobility" as one of the certainties of modern life. He argues that it is shortsighted to design cities as rigid environments when our society is forever on the move. Traditional construction merely puts obstacles in the way of an inevitable process. One solution he offers is the "space frame" (above), a mutilevel grid lifted high above the ground on *pilotis* which also contain elevators and main ducts for city utilities. Into the three-dimensional framework are inserted clusters of specialized containers for housing, schools, light industry, offices, and so on, all based on multiples of a 10 × 20 foot module. Only the life lines of the city—conduits for energy sources, water, transportation, and waste disposal—are permanently locked into the grid; the containers can be moved about to suit the convenience and aesthetic sensibilities of the community, with infinite possible arrangements. Half of the grid would be left open to sunlight, air, and resettlement at all times. On the ground, fifty feet below, are parks, gardens, and terminals for long-distance transportation. Friedman's frame would also work above existing cities, like his own Paris (below). In the first stage the grid would be mostly open, with the tops of older buildings poking through. Obsolete buildings are progressively cleared away, until the city is airborne.

Going Le Corbusier one step further, a group of Brito united under the prefab name of "Archigram" are saying, effect, "the city is a tool *kit*," a collection of components th should assemble and knock down as smartly as an Erector s Like most of these plans, their "Plug-in City" (opposite) bright with theory and dim on specifics—where do you go walk the dog, for example? But a lattice of support and serv feeders (A) is visible in a sector under construction, along w a gantry crane (B), which is in the process of inserting a plas capsule "room" into the lattice. Cranes run on rooftop trac (C) throughout the city, renewing parts of the living organis according to a schedule of functional obsolescence comp ed by the architects: kitchens and bathrooms, three yea living rooms, five; office space, four; parking garages, twen and on down to the forty-year life span of the main fram work. Rambling, ragged-looking structures (D) are for gene office, industry, and entertainment functions. Round towe are apartments (E)—see cross section at bottom—and hot (F). Hotels have hover-craft decks on top, long-distance mo rail connections alongside (G), and diagonal props (H) co taining extra utility supply lines. Rolling sidewalks, inter speedways, computers, and communications networks a standard accessories for this frenetic Pop city.

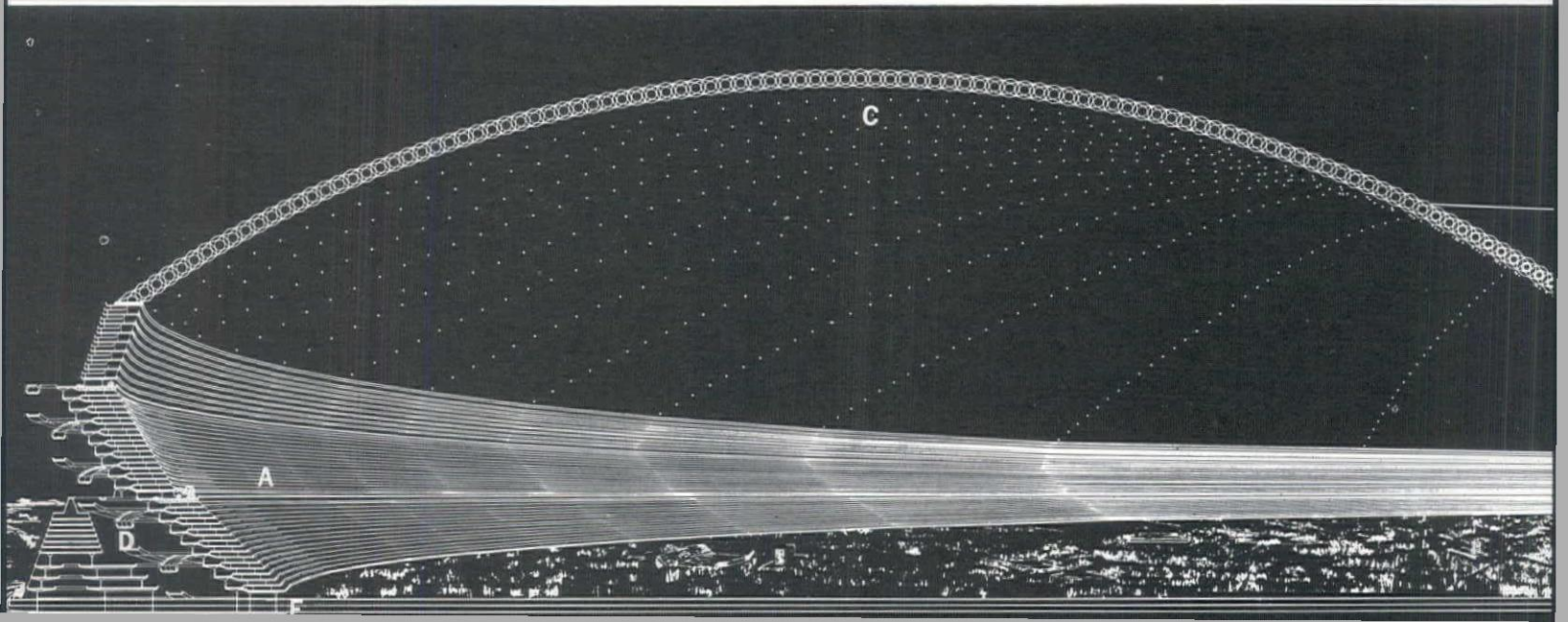


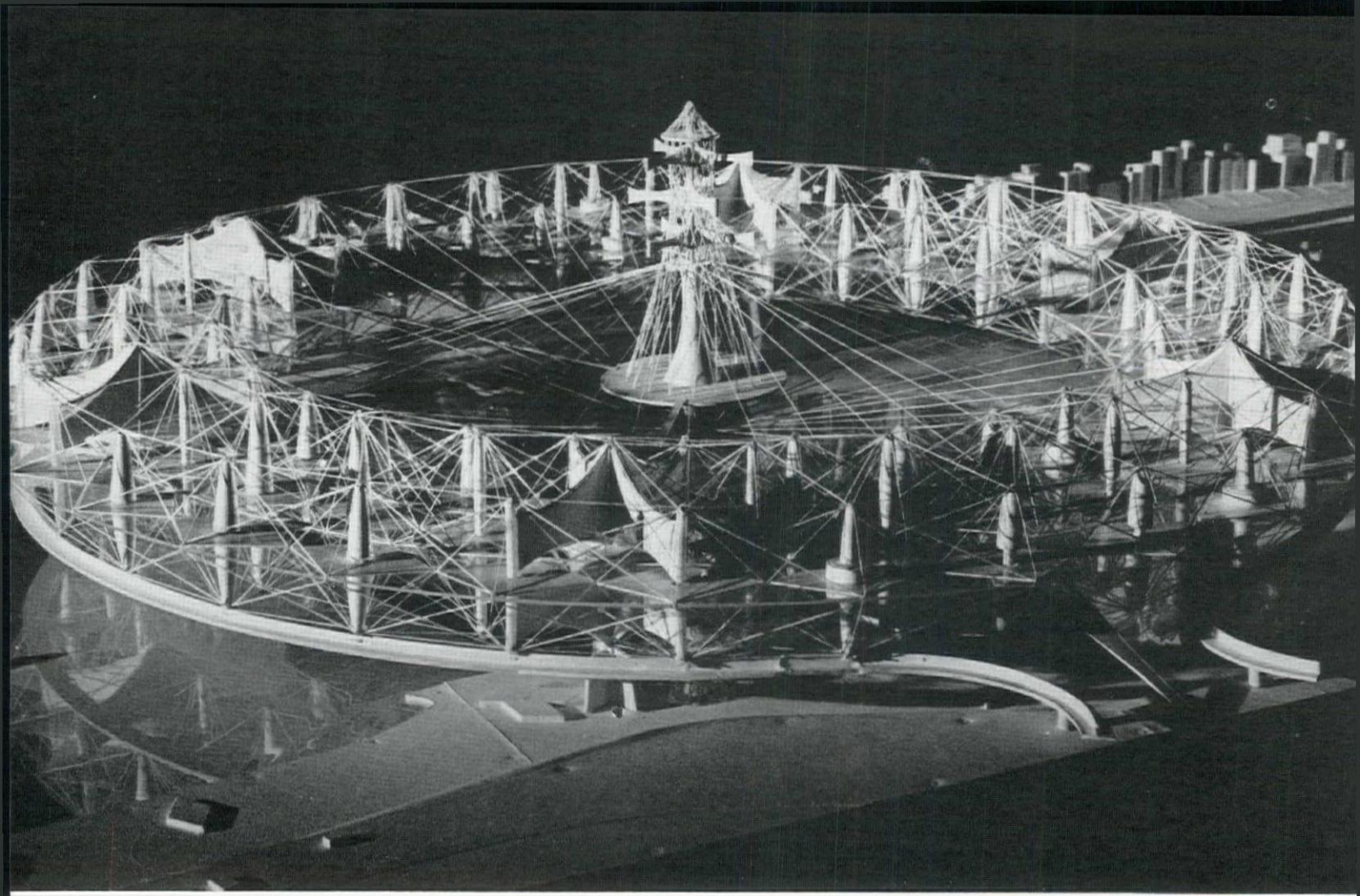

A
B
C
D
E
F
G
H



Buckminster Fuller, whose far-out schemes come true with enough regularity to confound the skeptics, has offered several programs for rehabilitating existing cities. Since urban renewal often creates more problems in resettling people during the blitz stage than it afterwards solves, he suggests an alternative system of towers (above) that could be erected over the living community. Each tower consists of a central support mast and a circular network of steel cables running at angles from the masthead to the ground. Three concentric rings—outermost, apartments; middle, shops, services, and elevators; and innermost, a roadway that winds around the mast—are held within the cable network like hoops of a skirt. The lowest decks would clear existing rooftops by five or six stories. The roadway, which runs from bottom to top, connects with one of several elevated urban arteries at the base. Fuller estimates that fifteen towers, each housing thirty thousand on its one hundred apartment decks, would accommodate Harlem's quarter-million population with plenty of room to spare. The whole job, including "tooling-up" for mass production of structural parts and basic furniture, could be completed in thirty-six months with helicopters used in assembly. Cleared of old housing, the land could be transformed into parks.

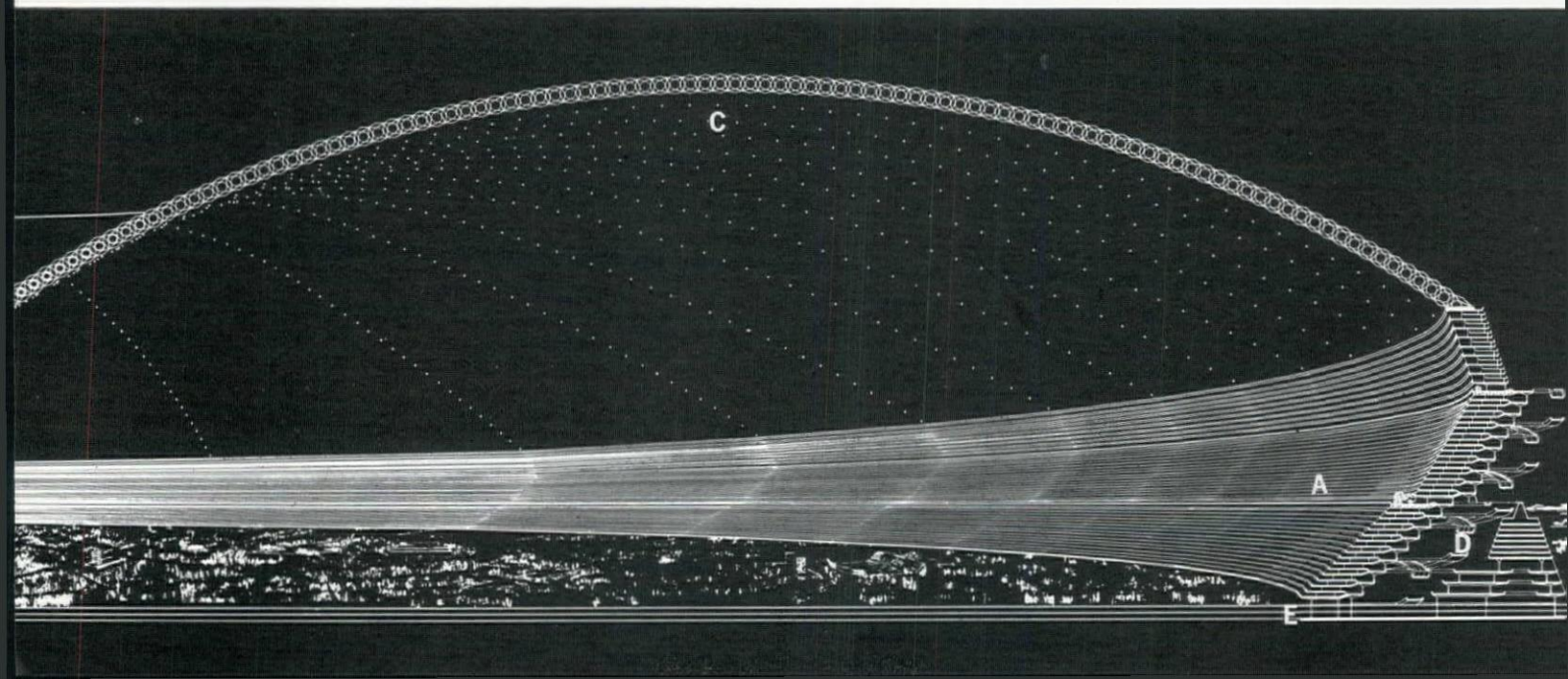
Another designer interested in the human density problem of Megalopolis—and New York is again the uncomfortably apt example—is James Fitzgibbon. His "Bridge City" (at top, opposite) would create new real estate over the Hudson River and the Jersey Meadows, where a whole colony of cities could be scattered, as on page 57, or wherever satellite cities are needed to house an expanding population. The ring shown is a scale model of a 6,000-foot-diameter "bridge" for 100,000 people. Its carrousel components include four supporting piers under the ring and a triangulated system of cables and

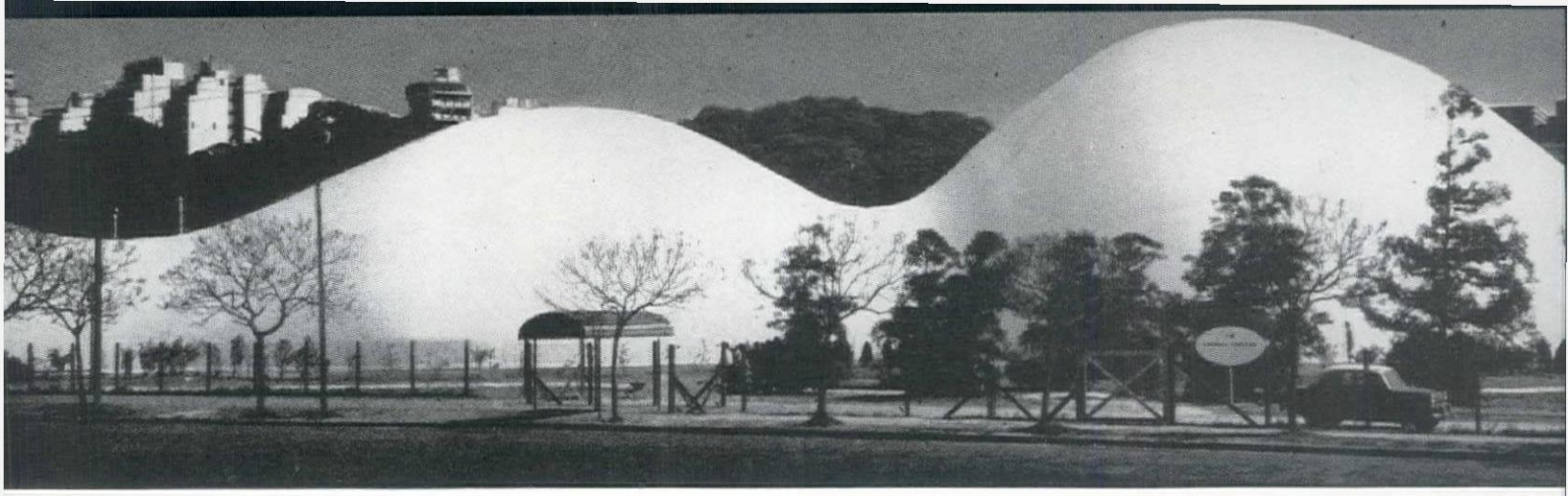




vertical spindles which distribute the weight of each part evenly over the whole structure. The spindles are actually fifty- to seventy-story buildings. Each is surrounded at the waist by a platform which is an integral part of the trussing and, in a more mundane fashion, its "front yard." Shuttle tubes, walkways, and service conveyers thread above and below this main level where stores and other public necessities are located. Auto parking and terminals are planned at the bridge's main access points to the mainland. At the center of the suspension system is a tall tower containing additional space for government, large shopping areas, and a park. The vertical structures of Fitzgibbon's bridge would dip no closer to the earth than two to three hundred feet; farming, woodland, or shipping could presumably thrive undisturbed beneath.

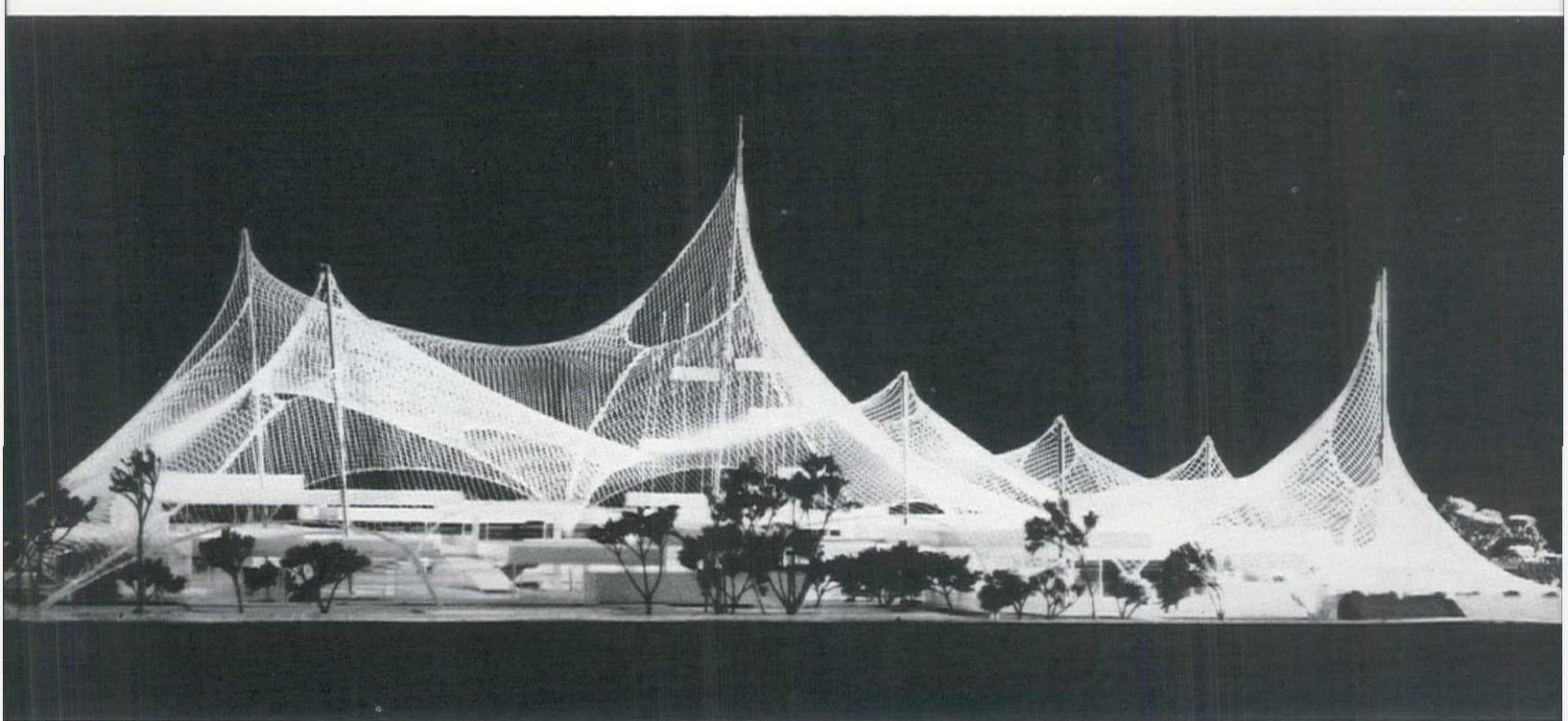
James T. Quinn, an associate of Fitzgibbon's and a fellow experimenter with high-density satellite cities, takes the environs of his own Raleigh, North Carolina, as sample site for a domed arena city for 100,000 inhabitants (shown in cross section below). His alternative to urban sprawl, specifically a nonindustrial research city, is a ring-shaped fifty-story structure (A) encircling a 1,100-acre park and a hollow central tower of shops and offices (B). A transparent umbrella (C) resting on these massive supports encloses a pollution-free, climate-controlled environment. All local transport facilities are out of sight: internal roadways (D) within the housing perimeter give access to the thirty-five lower stories, and banks of elevators service the high-rise apartments above. Mass transport to the commercial center is by way of radial subways (E) and underground service roads. Quinn's dome is no South Sea bubble—the roof over his self-centering city is designed of lightweight structural components that have already been used successfully in more modestly scaled buildings.

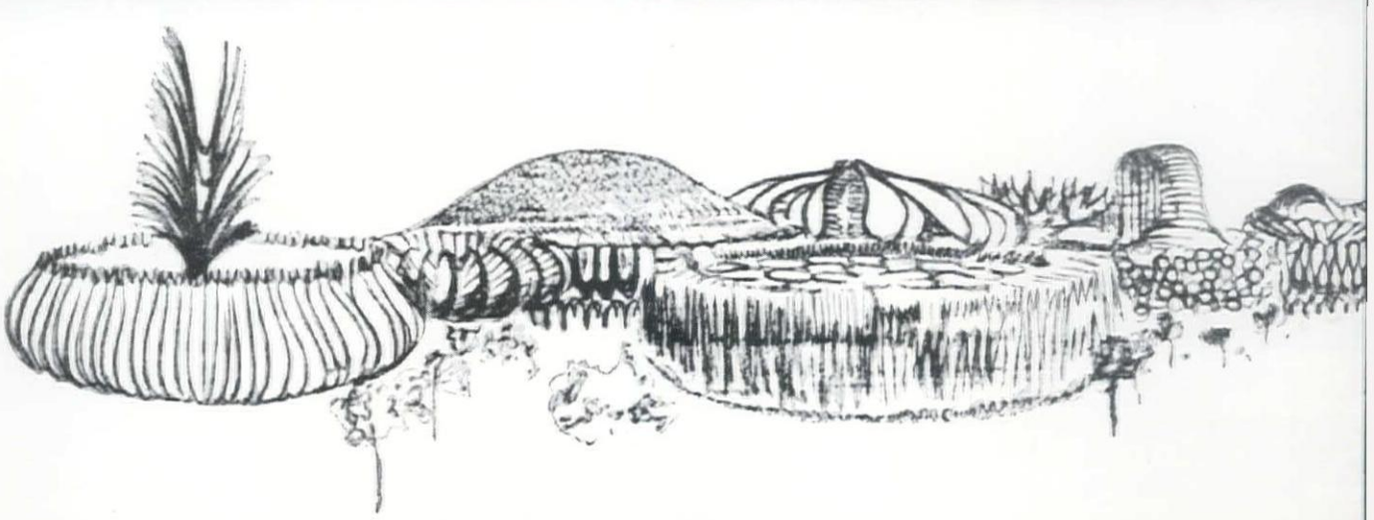




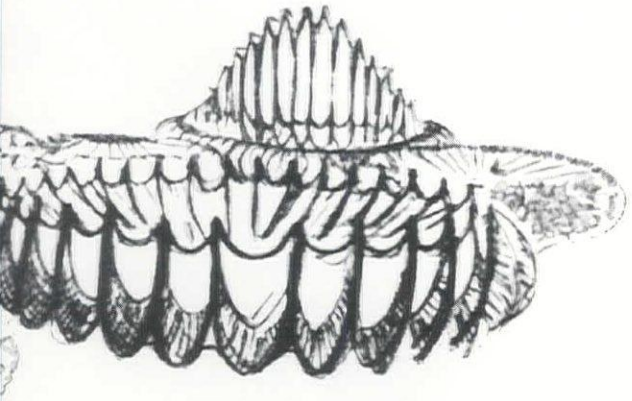
In search of portability and ease of assembly and maintenance, all wrapped up in an inviting, low-cost package, architect Victor Lundy has experimented with inflated structures. His first satisfied client was the Atomic Energy Commission, whose 300-foot traveling exhibit hall (above) can be anchored to the ground and given a steel frame for its revolving air-lock doors in four days; blowing it up to its full, undulating limit takes only thirty minutes. The double skin of vinyl-coated nylon weighs an astonishing five ounces per square foot. In another version, the Brass Rail refreshment stands at the New York World's Fair (opposite), an "air flower" is kept aloft by blowers and steadied with guy wires attached to a central spar. Lundy foresees broader urban use for his air-supported pleasure domes in the future—perhaps whole communities of portable buildings for a mobile population.

A shimmering cobweb of steel cables and a transparent polyester membrane will cover Frei Otto's pavilion (below) for the West German government at the Montreal World's Fair next year. Seven support masts produce the exotic profile of the roof, which is vented for opening in good weather. On a larger scale, Frei has proposed a canopy for the harbor of Bremen to facilitate freight handling on wet days and big tops similar to the pavilion's for the core of cities in troublesome climates. In his comprehensive scheme for the latter he would also replace private vehicles with elevated public transit, including "taxis" programmed to find their way to the desired destination at the touch of a button. Ground level would be a strictly pedestrian preserve.

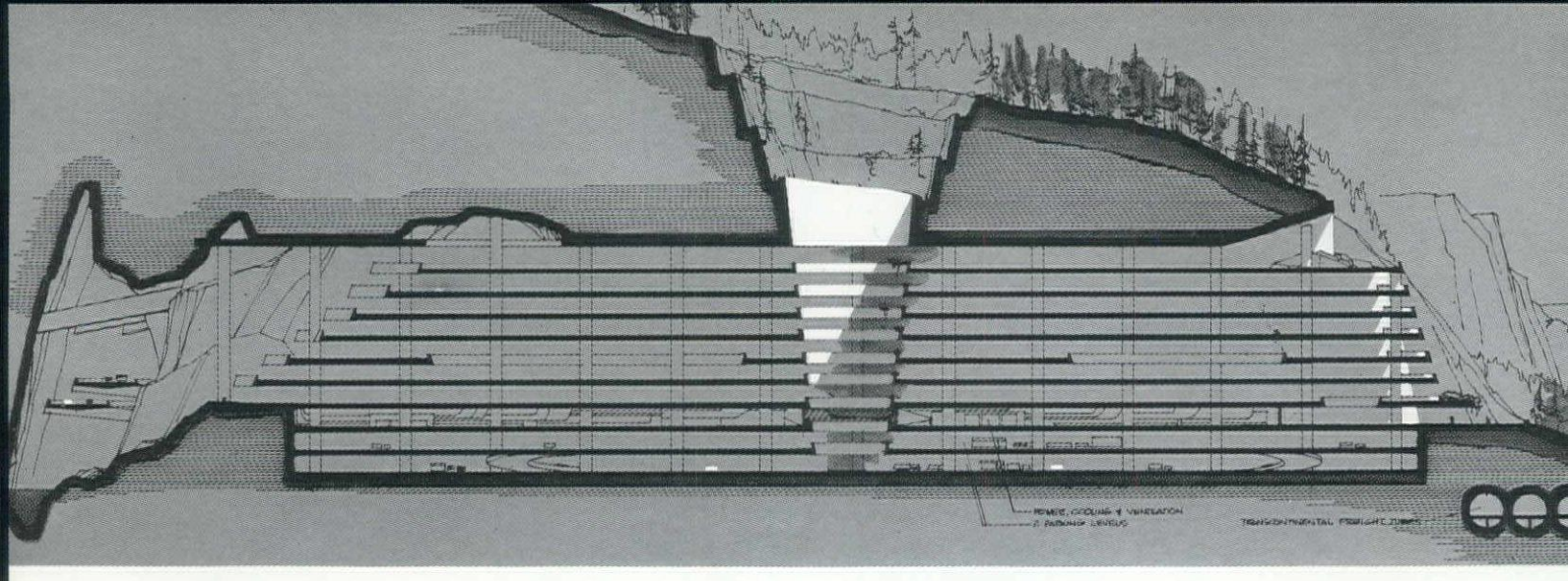




GEORGE CSERNA



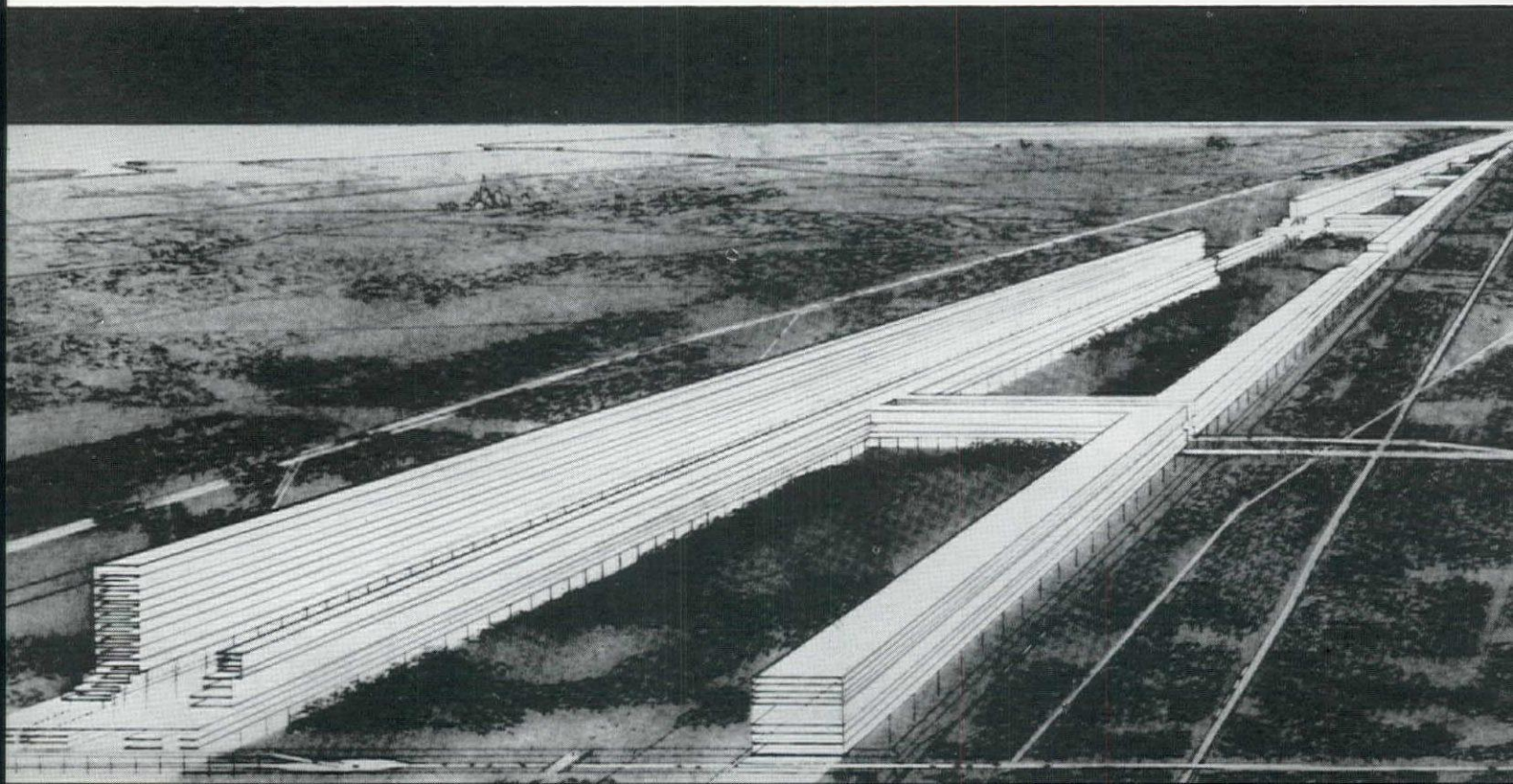
Cities that literally bloom in the desert or on the water are a possibility that fascinates William Katavolos, an American industrial designer. He argues that with what we are learning about the inherent behavior characteristics of various synthetics, chemist-architects will soon be able to mix up formulas in their laboratories which, when activated on site by a catalyst, will grow into predetermined, man-serving structures like those at the left. Characteristics of size, color, temperature, light, smell, rigidity, and even motion can be built into the recipe. Chemical architecture could be tested first in vacation housing where innovations meet the least resistance, and, Katavolos predicts, on any scale they will prove to be infinitely varied, organic, and in harmony with the environment.



"There isn't any building as beautiful, or as appropriate, or as important, as the bit of forest it replaces," in the opinion of architect-iconoclast Malcolm Wells. Noting that man can thrive underground even in unlighted caves and barren bomb shelters, Wells has drafted an aesthetically pleasing, fully equipped "Downtown" that is really down—underneath a forested hill. A cross section (above) shows housing centered around a sun-shafted canyon and as outcropping on the slope. Industry, business, transit facilities, air conditioning, and power equipment are buried further down. Transcontinental freight tubes are submerged, at right, too. The landscape, returned to a near-Arcadian state, would be a place of farms, recreation, and touring roads. As a modest first step, Wells proposes that we start sinking the ugliest and most voracious land-grabbers in our midst: the shopping centers, parking lots, warehouses, and high-speed highways.

In search of an environment "that allows the advantages of country and city within walking distance of every person," a team of architects and planners at Princeton University has been studying variations on the linear city. Its long, narrow, roadlike form, which Le Corbusier experimented with in a noted series of coastal city projects for Brazil and Algeria, is admirably economical of land and suited to jet-speed transit as no centrally organized city could ever be. One proposal for the Jersey Corridor, as the overall project is called, is the double-track city below. It would range housing, services, and shops in one multilevel phalanx and business and industry in a smaller parallel structure, the two separated by a generou greensward a half-mile wide. Automated urban transit and liberal choice of pedestrian walkways handle traffic alon each track. Crosswise buildings contain communal service and shuttle facilities between tracks. A chain of such linea cities, linked by high-speed rail connections, could serve grea concentrations of a mobile population without seriously di minishing the open country.

Japan's foremost architect, Kenzo Tange, has made a broa study of the problems of amorphous Tokyo, which he compare to that low form of biological organization, the starfish. Th prescribed cure (opposite), which Tange would adapt to an huge city of ten million or more, is conversion to an urban pat tern that has a main axis like the backbone of the superio vertebrates. Tokyo's "central nervous system" would be tw suspended highways spanning the bay (a small segment o these interlocking routes cuts across the top half of the pic ture). In the foreground residential subcities housed in tent like "Megastructures" hover over the water on pylons. Tange' oversized housing would contain up to fifty stories of apart ments on each curved façade. The random cutouts on th Megastructures' surface represent public terraces and play grounds. Schools, parking, shops, and monorail connection would be sandwiched in the cavity between the two apartmen façades. Business and industry are segregated from the Mega structure communities on a man-made island running betwee the parallel ribbons of the superhighways.

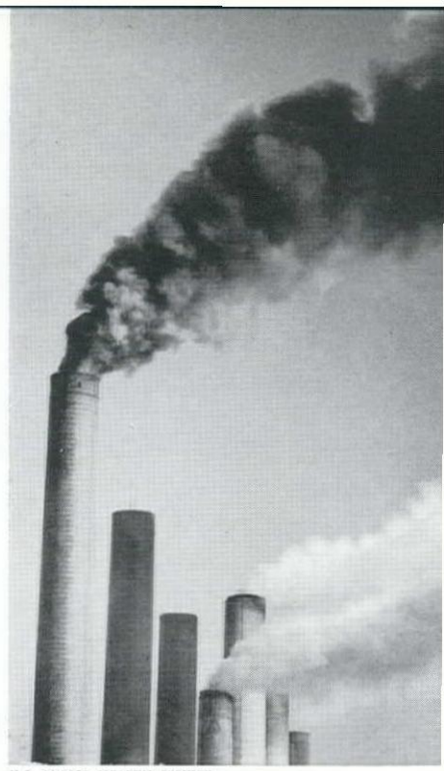




Must city dwellers be plagued with dirty air just to keep the countryside untouched?

ON THE SIDE OF THE CITIES

By ROGER STARR



U.S. PUBLIC HEALTH SERVICE

How to conserve a natural environn that will support human life, spiritu as well as physically, is a question has fascinated Americans for the fifty or sixty years. Since the frontier the West were closed and it became c that the nation's resources were limi men have claimed, with a mildly e: gerated vanity, that they belonged to only species with the capacity to cha its environment significantly. The c was not precisely true, as it happens, other animals, from corals to beav have shared this dangerous gift. Ne theless it was sufficiently relevant to rate at which the natural environn was being changed, and not for better, to result in vastly prac consequences. The conservationists l wrought miracles in the United St and not only in the setting aside of portant tracts of land to be prese against damaging or destructive They have also managed to incul conservationist practices in many of users of the land—the lumber compa some of the major farming interests, the hunters and fishermen. The conse tionists have been most successful v private interests when these latter v susceptible to their own economic f of depletion; they have been least cessful when the exploiters were th selves under relentless economic pres to operate cheaply over a short ter

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graze their herds in the national re-
es, for example, as an expedient
thod of meeting international or other
npetition.

The wildlife achievements of the con-
vationists have been remarkable. Spe-
of birds have been brought back
n the edge of destruction, the bison
the antelope have been saved, and
r-renewing forests have been re-
nted. But other tasks that remain un-
ne are so tremendous—saving the
soil from wind and water erosion,
aning the air from smoke and smog,
eing the waters from pollution, and
posing of solid wastes throughout the
ion—that any unpleasant suggestion
out conservationists or their programs
ms ungenerous. One must note that
history of the conservationist move-
nt, the nature of the enemies of con-
vation, and, perhaps, the turn of mind
t inclines people to this valuable work,
e led conservationists to make some
her characteristic judgments in *all*
es when, in fact, they may have been
propriate only in *some* of them.

. . . *conservationists can be wrong*

is shocking to find oneself writing
t conservationists can be wrong; yet
y can, even though this lines up the
ter with the bad cowmen, the bill-
rd designers, and the peddlers of used
s along the highways. Conservationists
d to share a prejudice against those
o are forced to earn a living by the
loitation—in the broadest and least pe-
ative sense of the word—of natural
ources. I once heard an Audubon So-
y lecturer sigh, while demonstrating
sad effects of overgrazing on grass
er and the consequent wind erosion
Western lands: "All this, just so some
n could have jobs." How fortunate,
ught I of the lecturer, that he was able
earn his living differently. His partici-
ion in the sins of the sheepherder was
ited to wearing woolen clothes. With
development of orlon he can even
iate conscience with comfort. There is,
the part of many conservationists, an
omatic readiness to find guilty any
proponent of change in the natural order, without balancing the change fairly against human needs.

I am enough of a fisherman to share the conservationist's resentment of change. The river I fish in northeastern Quebec is entirely wild. Not a man lives on the Kaniapiskau from its rise near the Labrador border until it finally empties into Ungava Bay on the northern rim of the continent. From our camp site a floatplane takes one hour to fly to the nearest settlement; yet during a recent summer, Quebec Hydro, the electric power company, established a survey camp right beside us. Its young men sported above us in a helicopter, threshing the air about our heads; trees were cut to take sights; bench marks were established; and as we fished under that lonely sky, we could sense that sometime all this would be gone. A monstrous dam several hundred feet high would block off the river, impounding thousands of acre-feet of potential energy on the beds of lichen, the spruce-covered ridges and eskers, the white water rapids and falls, the rocky islands. The dam would anonymize this land, burying its many distinctive features under a vast abstract hydraulic head. We hear of fish ladders, but for the brook trout, ouananiche, lakers, and pike of this northern country, for the wolves, the bears, the minks, and the caribou, the dam would mean extinction.

I share the conservationists' bitter resentment against this total extermination of a land that, for countless ages, has lain undisturbed but for the soft footfalls of a few Indian trappers, a land practically inconceivable in its vastness, a land of total human silence.

Yet this is only one side of the story. The power from this dam, generated quietly and without smoke, will eventually surge through heavy overhead lines four hundred miles south to the St. Lawrence, and then south again to cities in New England and New York. Millions of people live in those cities, where daily the dust and sulphur fumes in the air push up to the point of danger. No one has completely solved the problem of filtering the pollutants of coal or oil smoke from the fuel chamber exhaust of the power stations. The problem becomes even worse when burning conditions vary, due to the sudden change in power loads when a dark cloud passes over the city or when, on an unexpectedly warm morning, a million air-conditioning units in homes and offices are snapped on all at once. The smoke is sometimes heavy and black; sometimes it's washed out with a plume of steam. But the particles of fly ash or oil soot blow across the city, sift in around the edges of the window frames, settle on the roofs. They blacken the inside of the lungs, and one can as yet only guess at their long-range influence on the life cycle of the city man.

. . . *men in the cities have their own claim on the wilderness*

Much as I treasure my fishing trips, my fellow men in the cities have their own claim on the wilderness. And as the pressure of increased population rises relentlessly, the issue before the city is no longer how to conserve the wilderness for those who can reach it, but how to conserve the human species altogether. It seems to me that in their resistance to hydropower, to high-tension overland electric power transmission, to the provision of greater access to undeveloped land for mass recreation, all of which mean compromising the pure wilderness, some of the conservationists are themselves opposing a fair try at the most serious of conservation problems. And how few of the urban critics, believing in the wonders of community of interest, have dared to stand up to them.

Two kinds of conservation are needed to keep alive urban man, who is choking on his wastes. Both involve problems in the transportation of wastes out of the city; one deals with air-borne wastes, the other with water-borne wastes. To some extent the waste problem can be lightened by attention to transportation at the other end: to bringing into the city only a product so pure that no wastes will be left to bring out. It is regrettable, but true, that the transportation of wastes is so lacking in glamour that it has attracted far less attention, sympathy, and moral

fervor than the preservation of scenery and natural species. No one wants to say that there may well be a conflict between the preservation of scenery and species on the one hand, and clean water and pure air in the cities on the other. I find myself, with few critics for company, on the side of the cities.

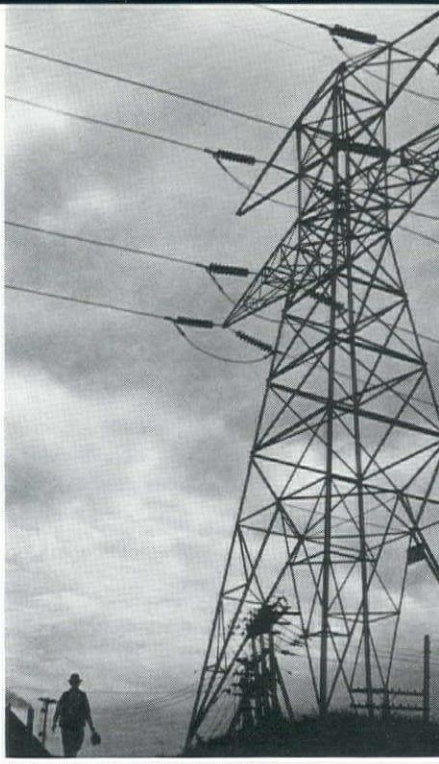
Automobile exhausts and garbage incinerators notwithstanding, the most pervasive of air-borne wastes with which the big northern cities must contend are those produced by the generation of electricity. The degree of dependence on electric power sometimes escapes the attention of city dwellers. But it is perfectly evident to anyone who lives in a modern country house, where the water is pumped electrically from an artesian well, where the heat depends on an electric motor to vaporize oil and a spark gap to ignite it, and where the refrigerator and stove are energized by a distant generator sending power over lines that are vulnerable to lightning. When the lights go out, so that the householder cannot read a book, his alternative diversions—the television set, the phonograph, the radio—also fail him. The break drops one instantly into a remote historical period, in which water must be fetched by hand, sanitary plumbing disappears altogether, and food can be cooked only in the fireplace, by candlelight. When power failure hits the city there may be water and gas, but all internal transport stops; elevators are caught between floors, and the subway trains are stuck between stations.

Power costs vitally affect living costs in the city

Cities may get their electric power from several different sources; the one option they lack is to cut down their total power requirement or even stabilize it at any given level. In engineering offices men spend their days thinking up new devices to increase the urban dependence on electricity. The art of brushing one's teeth by hand is fast becoming as obsolete as scrimshaw work; the day is almost here when slicing a roast without an electric knife will be as quaint as using buttons to fasten one's fly.

In most of the cities of North America electricity is generated by high-pressure steam turbines, for which the steam is created by burning pulverized coal, or oil, or natural gas. Atomic power aside, no one today would design a power station for a good-sized city unless it were capable of being energized by at least two of the fossil fuels. The wisdom of this flexibility became apparent during the Second World War, when the federal fuel administrator advised the cities that he could not guarantee railroad cars or tanker capacity for future delivery of coal or oil. The cities having power stations that could burn coal set about piling up tremendous reserves of it, which kept them going through the war. Being able to switch back and forth between coal and oil subsequently has permitted the power companies to minimize their fuel costs. But both coal and oil contaminate the atmosphere, and there seems to be no sound reason to believe that air pollution from either can be eliminated technologically, except for those plants which are able to operate at a constant power load. Nor is there any evidence that large quantities of either coal or oil can be produced within specified chemical limits, as imposed by the legislatures of some cities with air pollution problems. If such controlled fuels could be produced in quantity, their price would surely reflect the resulting monopoly conditions. Incidentally, higher costs of power generation do not simply reduce the profits of the utility company, a comforting bit of nonsense to which legislators frequently succumb. Power costs vitally affect living costs in the city in question, as well as the ability of its manufacturers and workmen to compete with those of other cities. Ironically, as the power costs in a given city become less attractive to round-the-clock industry, the city's power load swings up and down more sharply between day and night and its pollution problems rise.

All of these intricate causes and effects lead one to the conclusion that, local laws notwithstanding, ultimate control of air pollution means that the men in charge of generating electricity must find a substi-



RONNY JACQUES STUDIO—BLACK STAR

tute for coal and oil for all power gen tion except the nonfluctuating base.

From time to time the suggestio made that natural gas can be used great economy in a gas turbine, elimi ing the whole steam-generating phas the electric-producing cycle. Gas bines would mean that no coal o would be used and that air pollu could be stopped, according to the e neers who have recommended it, wit raising the cost of power. Unfortunat this suggestion at best means only obnoxious dust would be replaced by bearable noise. No one who has st near a turbojet airplane while it war up could relish the prospect of living a similar but stationary noisemaker hundred times larger. Finally, the av able natural gas is so much more rea suited to the consumer's kitchen that Federal Power Commission is unlikel permit its use on a gigantic scale, and manently, when other fuels are equ suitable and are in much greater supp

A second alternative to coal and o and air pollution—is atomic energy. suggestion that steam-generating stat powered by atomic fuels should be within the city is generally greeted local cries of outrage and indignat Atomic power—perhaps because of military background—seems to the pu far more dangerous to human life th little dusty air. Not only is this wr

: those who believe it should be sleep-
s already. If atomic energy is so dan-
ous to the public, the same public is
eady endangered by the atomic reac-
s that now exist in many American
es, buried in the physics laboratories
the great universities. The engineers
o design atomic power plants begin by
posing upon themselves a stiff safety
terion: what would happen to an
mic energy plant if it were hit, dead
by a jet airliner, flying at speeds in
ess of the maximum flown today, and
ded several times beyond current load
its? The atomic plant is so designed
t even a disaster such as this would not
off a chain reaction. But the public
es not yet believe this, and, in fact,
mic energy is economic only in the
y largest installations. Its future eco-
mics are uncertain. In 1970 private in-
stry must, by law, take over the own-
hip and reprocessing of uranium fuels.
e forecaster, looking beyond that date,
st never forget that public policy will
vitably take into account the billions
dollars invested in the production and
ining of coal and oil, and the many
usands of Americans whose liveli-
ods depend on extracting these fuels
l transporting them to market.

the urban air is to be made
rmless, the rural atmosphere
will be threatened

ll of these pressures lead the urban
ity companies in the North to a single
nclusion: to reduce air pollution sig-
cantly they must generate power, for
k demands, outside the city and
nsport it into the city as electricity.
is means coal or oil plants near the
l or oil fields, or hydropower backed
to huge dams or upland reservoirs.
d any one of these alternatives means
h-tension lines cutting across the rural
dscape. If the urban air is to be made
mless, the rural atmosphere will be
eatened by power lines. Many conser-
onists react to this confrontation by
reeing that it is more important to
serve the rural atmosphere than to
clear the urban air. They are deter-
mined to resist power lines. This resis-
tance is growing. The conservationists
propose now to require the burying of
high-voltage transmission lines in rural
areas, but the expense is so great that it
would make the long-range generation of
electric power uneconomical, or drain off
federal subsidy funds that could be used
for more serious conservation matters.

The untouched Garden of Eden . . . has all but vanished

These members of the conservationist movement are guided by their memory of wilderness. They feel that the high-tension electric power lines which transport electric power from remote generating stations to the cities mar and disfigure the countryside. No one charges that the lines actively endanger anything. My own view is that the lines are neither ugly, like billboards, nor much of a nuisance. The alternating current in the lines formerly caused interference in nearby radio and television sets, but this has been eliminated by recent technological controls and by FM radio systems. As the transmission distances become greater, the voltages necessarily become higher in order to minimize transmission losses. As the voltages rise, the towers must rise also, to support heavier copper cables at greater distances from the ground. The high towers dwarf ordinary buildings. Although neither noisy nor garish, the lines carry with them the reminder of the surpassing technological and industrial values of the society that produces them, values that cause shudders in the breast of the suburban country gentleman.

This means that high-tension lines are preferably routed through wild country. There they are much less noticeable than when running over the suburban landscape. But those conservationists who view the primary objective of their movement as the preservation of wilderness mobilize in opposition. And here, in suburb and wilderness, we have the direct opposition of rural and urban values. If the conservation of wilderness means keeping a place untouched by any reminders of man's effect on his physical environment, its pursuit in North America must be quixotic. Even in the remote vastness of northern Canada jet planes leave their vapor trails in the sky, reminding the solitary ground observer that he is but four hours from Orly. Man's satellites pass overhead in all parts of the globe, and the ether is filled with a constant chatter of voices and code. The untouched Garden of Eden, with its profound philosophical overtones, has all but vanished, and the struggle to maintain it can only be carried on at the cost of the city man.

A more relevant activity is to try to distinguish between those elements which destroy the landscape needlessly and those which hardly affect it. I would oppose the cutting of highways through national or state parks, unless to provide access to them; I would oppose billboards everywhere, depriving the motorist of his vistas of the land; I would oppose sprawling developments and the use of highways as shopping streets, except in carefully planned circumstances. But the march of high-voltage power lines across the landscape must continue, and spread, to save the lungs of city men. The voltages are so high that these systems cannot be put underground except at unbearable expense, a fact of life explicitly recognized by the White House Conference on Beauty. In any case, burying the lines would also scar the scenery irretrievably. We cannot have both clean air within the city and a countryside that does not provide for generating electric power outside the city. The argument that rural beauty is more precious than urban lungs, or vice versa, is only beginning—but it will become one of the vital issues affecting the entire future of the cities.

The growing campaign against high-tension lines imperils the cities because the lines pass through land which is under the control of other jurisdictions. The Federal Power Commission now has the authority to require that state and local governments give their permission for the erection of power lines. Already, however, suburban legislators would shift or abrogate this right, and conservationist newspapers like *The New York Times,*

apparently unmindful of the consequences, support them. If the rural constituency gains control over the erection of lines from which they do not benefit, the cities will be in an impossible position. And if some other commission of the federal government were given aesthetic veto power over the rulings of the Federal Power Commission's power-line approvals, we would have total confusion.

If air pollution from electric generation is a local problem, requiring only the maintenance of present federal powers to enable each city to handle it, water pollution involves wholly new arrangements. The difference results from technological facts. The air pollution produced in a single city usually dissipates within a short time. It does not fall out, in high concentration, on the next city downwind. Disposing of the particles in the air is not the problem; they can easily be disposed of if only they can be caught. Extracting these wastes is the problem—in some cases, as we have seen, a problem that cannot be solved, but only avoided.

The disposal of a city's solid wastes—its garbage and trash—involves, on the other hand, vast tonnages which have already overloaded the imagination and the budgets of municipal officials. Catching the wastes is no part of the problem. What does one do with them after? Lowlands and marshlands are disappearing beneath what is euphemistically called "sanitary landfill." How to avert this destruction—and the air pollution resulting from incineration—should be a major long-range national goal of the conservationists. There is no answer in sight, although the time may come when the wastes from the cities will be carried vast distances to refill holes made in other parts of the nation in the process of strip mining and land depletion. This prospect stuns the imagination.

The problem of water-borne wastes differs from both air pollution and solid waste disposal. Unlike air pollutants, water-borne wastes can be caught by present technology, and unlike solid wastes, they can be chemically reduced to manageable tonnages. The gravest problems of water pollution are political.

Dirty water is contained within the fixed banks of a river, or lake, or bay. In the river its flow is all in one direction; in the lake or bay its spread is limited by the shape of the body of water. If the body of water is large, probably more than one independent city is using it for the same purpose. Since there is almost always another city upstream from any city you can think of, the taxpayers can always find a plausible reason to argue that spending *their* money on sewage treatment will be futile. Sewage treatment of their own wastes won't even clean the river before their eyes: that was poisoned by their upstream neighbors. One cannot even argue for sewage treatment as farsighted altruism. Unless all cities on a river invest in it, nothing is put right for anybody.

Without detailing a long and dreary treatise on sanitary engineering, let me only say that the waste disposal systems of most American cities combine storm and sanitary sewers, and that the whole complex is subject to storm flooding, which carries polluted water into the river, lake, or bay where the city stands. Unless the city is located on a small body of fixed water where it can see the results of its own, and only its own, lack of sanitation, the chances are that it will move slowly to appropriate money for the treatment plants and catch basins necessary to clean up the effluent.

...who wants a sewage-treatment plant named for him?

Nor is it likely, except under such circumstances, that any system of low-cost loans from the federal government will succeed in moving cities to invest property, time, and tax revenues in the correction of water pollution. How is a city to be coerced into doing something its taxpayers do not wish to do unless a direct correlation can be shown between the health and happiness of the city and the expenditure of funds? Sometimes it can be argued that the erection of a sewage-treatment system will reclaim a filthy shoreline or waterfront for recreation. One would expect the advocates of adequate recreational facilities to rally po-



GLENN ZAHN

litical support for such an enterprise. they don't. They do raise money buying a choice piece of land fo wholly new municipal golf course park. I suppose one would like to one's name over the gates of a new p —but who wants a sewage-treatm plant named for him?

While there has been a great deal w ten about the use of regional comp between cities and counties, or e states, in the accomplishment of spec developments—harbor authorities, wa development authorities—the sanita compacts that have been entered into counties or states have simply n worked. The Interstate Sanitation C mission, consisting of representatives New Jersey, New York, and Conne cut, has been attempting to clear water-pollution problems in the N York Harbor-Long Island Sound c plex for years. The Commission f time to time hands down orders to c in the region, demanding that withi specific period of years each succee removing pollution from its sewer e ents. As monotonously and regularly the Commission hands down its decr the towns, cities, and counties mon nously refuse to pay attention to th What is to be done with them? W is the penitentiary to which we can c mit New York City? Shall Camden s Philadelphia out of the room? In the

nce of any real self-interest in spending oney on treatment plants, how are the cal wills to be made to bend for the :nefit of the remote general interest?

The federal government has also been sing its conscience on water-pollution atters by promising special help to those ates, or parts of states, which are able join with other states, or parts of them, the formulation of regional planning odies. This high-sounding pastime has ever got very far because of the vast onfusion, even in the minds of experts ith some experience, between planning id execution. The federal government is attempted to pass legislation control- ig industrial water pollution. It gets owhere, or almost nowhere, because the dustries claim, with perfect justice, that e cities and towns are worse offenders. everyone waits for the towns to con- ol this pollution, we will never make a art. For even if a planning agency gets e time to consider long-range matters, has no direct way of forcing other encies to carry out its plans.

The federal government must take on the responsibility

This suggests to me that water depol- tion can only be handled directly by e one governmental force able to exe- te a program in a number of different ies, spread over several states. The deral government must take on the re- onsibility of building and operating wage-treatment plants and depollution ograms in the navigable waterways of e country. This would mean that the deral government would itself acquire e sites for the plants and operate them rectly, in connection with the munici- l sewage and drainage systems. The deral government already has assumed sponsibility for the construction of ajor dams for flood control, conserva- n, power, navigational, and recreational rposes throughout the nation. Pollution in many ways, as serious a deterrent the fruitful use of the waterways of e nation as the flooding which the my tries to control with its dams and rees. It is as serious as the erosion of the headlands and valleys which the Bureau of Reclamation tries to remedy with *its* system of dams. Neither of these agencies turns over the ownership and operation of its systems of public works to local municipalities, states, or ententes between regions; I can see no reason for believing that ownership and control of the means for cleaning the polluted waste waters of the cities should be any different. Nor is there anything significant to be said for local control of a sewage-treatment plant; such an establishment is hardly open to the claim that a federal bureaucracy would run it in a way that would ignore local sensibilities, traditions, and needs of self-government.

Other programs, such as low-rent housing or highway development, provide federal funds and subsidies for state or city governments to use in the development of facilities that meet federal standards. Direct federal ownership in these cases is impractical, not only because of local sensibilities, but also because local state courts may not uphold the federal government's right to acquire land by condemnation for purposes not specifically set forth in the state constitution. But the danger posed to the national security by the recurrent millions of tons of human and industrial wastes will not wait for the assuaging of local sensibilities. The latter have no proper place, in any event, in a program concerned almost wholly with technological problems. In the case of water-treatment plants, however, there should be little trouble in using the powers of local government for site acquisition, provided only that an agency of the national government constructs and operates the plant. There is no opposition to such plants now, only to the spending of local money on them.

The very survival of urban man depends in great measure on the prevention of two types of pollution: air and water. The clearing up of urban air depends not only on what happens in the cities themselves but upon the ability of the cities to bring in their electric power requirements by overhead transmission lines. As for the elimination of water pollution, here the federal government must be encouraged to take direct action in an area of government in which it has so far not dared to move directly.

If one follows the editorial writers of the nation's most serious newspapers, these prescriptions for urban conservation are perversely opposed to the goals for which the conservationist writers are plumping. No high-tension transmission lines, no spoliation of wilderness or suburban vistas with electric power cables—this is the cry of the editorial writers. But it is irrelevant to the urban need. New power lines must be built, possibly right through the wilderness, possibly right through the larger national parks.

"Join regional compacts and clean up our waters!" cry the conservationists—asking for something which the cities are clearly incapable of accomplishing themselves. Even the conscientious reader of the urban critics has little notion of what really must be done in order for him to breathe clean air and swim in the bay, river, or lake that is only a short drive from his urban home. No simple excoriation of industrial pollution, no snide remarks about the "power lobby," will begin to clear the air or cleanse the water.

. . . an enterprise that will involve perhaps half a trillion dollars

Let no one believe that an end to water pollution would be a minor change in the American scene. Reclaiming polluted waters on an appropriate scale is an enterprise that will involve perhaps half a trillion dollars, and put millions of men to work. It will remake the American map. Without reconstituting the wilderness of the past, it will nevertheless make possible a handsome, dignified common future. But it will require the assent of local elected officials to federal measures they have never easily assented to before, and their courageous defiance of those conservationists who, in the name of beauty, would permit urban man to choke.

This article, like the one on preservation in the last issue of Horizon, *will appear in Roger Starr's forthcoming book,* The Living End, *which is to be published by Coward-McCann this fall.*

AND NOW,  A FEW KIN



We begin our album-and-diatribe with a meet (above) of the League of American Wheelmen, about 1881. In front are several old-style "boneshakers," or, as they were called because of the disparity in size between the two wheels, "pennyfarthings." The bicycle was young then—it antedates the automobile by only a few decades—and it had yet to produce the more practical "safety bike" with a chain drive, brake, and two wheels of the same size. It is hard to believe now, but bicycles bewitched America in the 1880's and '90's. Everybody rode them. The League swelled to over 100,000 members, intimidated legislatures, lobbied for better roads, free transport for bicycles on trains and steamboats, and equal rights with carriages, and paraded behind buglers blowing "Boots and Saddles." Then it was all over. The motorcar swept the land like the plague.

This is the late Marilyn Monroe as a svelter version of the late Lillian Russell, photographed by Richard Avedon in 1958. The bike is replica of a famous gold-plat one given to Miss Russell by an admiring manufacturer.

VORDS FOR THE BICYCLE...

t doesn't make smoke, it doesn't make smog, and it never makes a bad picture





To bring out natty costumes, nat



BYRON—MUSEUM OF THE CITY OF NEW YORK

This dapper type won first prize in the New York Evening Telegram *Cycle Parade in 1896. The reason, according to Grace M. Mayer in her book* Once upon a City: *his costume. He made it himself, and all in one piece.*



This is a bicycle built for two, all right, but less practical than the tandem. Hang on, Daisy!



Costume winner at the gymkhana in Scarborough England, in 1895: the Devil as a scorcher

racteristics, and man's natural exhibitionism, there's nothing like a bicycle



icycling has a long, eccentric history in which pride has gone steadily before a good many falls. Leaving aside a few crude "hobbyhorses," or aids to lking, the first real bicycle—that is, a two-wheeler propelled with both feet ıtinuously off the ground—was built by a Scottish blacksmith, Kirkpatrick cmillan, in 1839; its rear wheel was driven by treadles and levers. He soon ocked down a child with it, paid a five-shilling fine, and fades from history. Paris about 1862, one Pierre Michaux, who never heard of Macmillan, devised pedal and thus what became the boneshaker. France built him a large memo-. America's great contribution was "Mile-a-Minute" Murphy, who made his e in 57⅘ seconds on June 30, 1899, riding on a board path laid between Long Island Railroad tracks and behind a special car used as a windbreak.

General Baron von Fahrrad, with a squad of the Eisenbahn-polizei? *Krupp's answer to George Stephenson?* Nicht doch—*it's only the Railway Bicycle, invented in 1890 in Kalamazoo, Mich., and Lord knows who the models are.*



The bicycle got to China in 1



When the bicycle appeared in the Orient, the local artists were carried away by the beauty of it all; one wonders what these two Shanghai lotus flowers said when they got their gowns tangled in the rear sprockets. Everything in China today, however, must be a "great leap forward," and we show one such leap opposite, dated 1966. These are acrobats, and they must have a magically powerful bike. As to bicycling itself, an official pamphlet observes that "the art now blooms again because the government is kind to it." Certainly no one could accuse anyone in our government of this particular Communist tendency, for in America the bicycle languishes. No arguments seem to stir our coronary-bound citizenry from their gleaming, defective gasoline-burners. The only question remaining is whether the smog will get our lungs before atrophy gets our legs.

and look, Mao, no hands!



COLL. DAVID SALOMONS, CABINET DES ESTAMPES, BIBLIOTHEQUE NATIONALE

KEYSTONE PRESS

These jolly Red Chinese acrobats (10—Count 'em—10) must surely be the largest group that ever climbed onto a single machine, but one would prefer not to think of what would happen if a wheel got caught in a trolley track.

TURKISH DELIGHTS



Gentile Bellini made the exqui site drawing (left) of a Turkis artist at work, perhaps paintin a portrait like the elegant one o Mohammed II (opposite) en joying the aroma of a ros

The sultan's treasures were hidden from the public until a few decades ago. Now an exhibition touring America reveals the full splendor of the art of the Ottoman Empire

By NORMAN KOTKER

It is against the law of Islam for anyone to paint a portrait. On the Day of Judgment, the prophet Mohammed is reported to have said, painters will be doomed to hell for their blasphemous attempts to compete with God by creating life. If the religious laws were practiced as much as they were preached, Moslem artists would never have represented any living thing. Yet the Moslems did develop splendid schools of portraiture and historical painting, for they have been no more noted for strict obedience to religious laws than members of other faiths have been. Over the centuries Islamic artists have painted pictures of dervishes, sultans, and saints, subjects from the Koran, the Bible, and Arab and Persian legends, and vignettes of everyday life, from women in childbirth to street sweepers at work. Palace walls were decorated with hunting scenes, or portraits of conquered kings, or dancing girls, and, in one case, even a representation of a Christian church, complete with praying monks. The Ottoman sultans of Turkey were in the forefront of Islamic society in their patronage of art, commissioning numerous portraits of themselves, their favorites, and their families. But this work was, often as not, done in secret, to keep the sultan's subjects from

TEXT CONTINUED ON PAGE 82



SKIRA ART BOOKS; OPPOSITE: ISABELLA STEWART GARDNER MUSEUM, BOSTON



PHOTO SELAHATTIN OZTABTAN—SMITHSONIAN INSTITUTION

Two ill-fated sultans, Mustafa II (above) and his brother Ahmed III (opposite), are shown in official portraits. Mustafa came to the throne in 1695, but he was overthrown eight years later and succeeded by his brother. Ahmed held on longer, but was eventually ousted himself, and succeeded not by the son who is seen with him in this miniature but by a nephew. Ahmed's reign was known as the Tulip Age. The Turks developed a mania for tulips and depicted them often in their art; some stylized ones can be seen on the throne behind Ahmed's head. The sultan was famous for his fetes, at which guests wore tulip colors and strolled in the gardens.



SKIRA ART BOOKS

TEXT CONTINUED FROM PAGE 78

discovering that he was breaking the religious law. Despite the secrecy, the Ottoman style of portraiture and miniature painting evolved into a distinctive and sophisticated art form, as splendid in its own way as Ottoman architecture, which is seen in so many beautiful mosques throughout Turkey and is usually considered the noblest accomplishment of Turkish art.

Many of the great treasures of Ottoman civilization are being displayed in an exhibition of the arts of Turkey, sponsored by the government and now touring the United States. The show will be seen this year and next in ten major American cities. It includes much else besides the art of the Ottomans, beginning with work from the Late Stone Age and going on to examples of Hittite, Greek, Roman, Byzantine, and Seljuk Turkish art. For Asia Minor is rich in relics of the civilizations that thrived there long before the arrival of the Turks.

It was not until the eleventh century A.D. that the Turks themselves began migrating into the country. Their original home was in central Asia, where they were nomadic horsemen roaming the steppes. Even in that quarter of the world—seemingly so remote—the Turks were subject to the influence of the great centers of world civilization. Caravans made their way across the vast Asiatic plains, bringing Greek and Roman coins, silverwork and goldwork from Persia, and paintings and silks from China. At the same time, the Turks ranged widely over the steppes; remains of their own ancient art—showing these strong and varied foreign influences —are found throughout regions of Asiatic Russia, in Outer Mongolia and Afghanistan, and in the part of China that today is called Sinkiang, although it was formerly known as Eastern Turkestan.

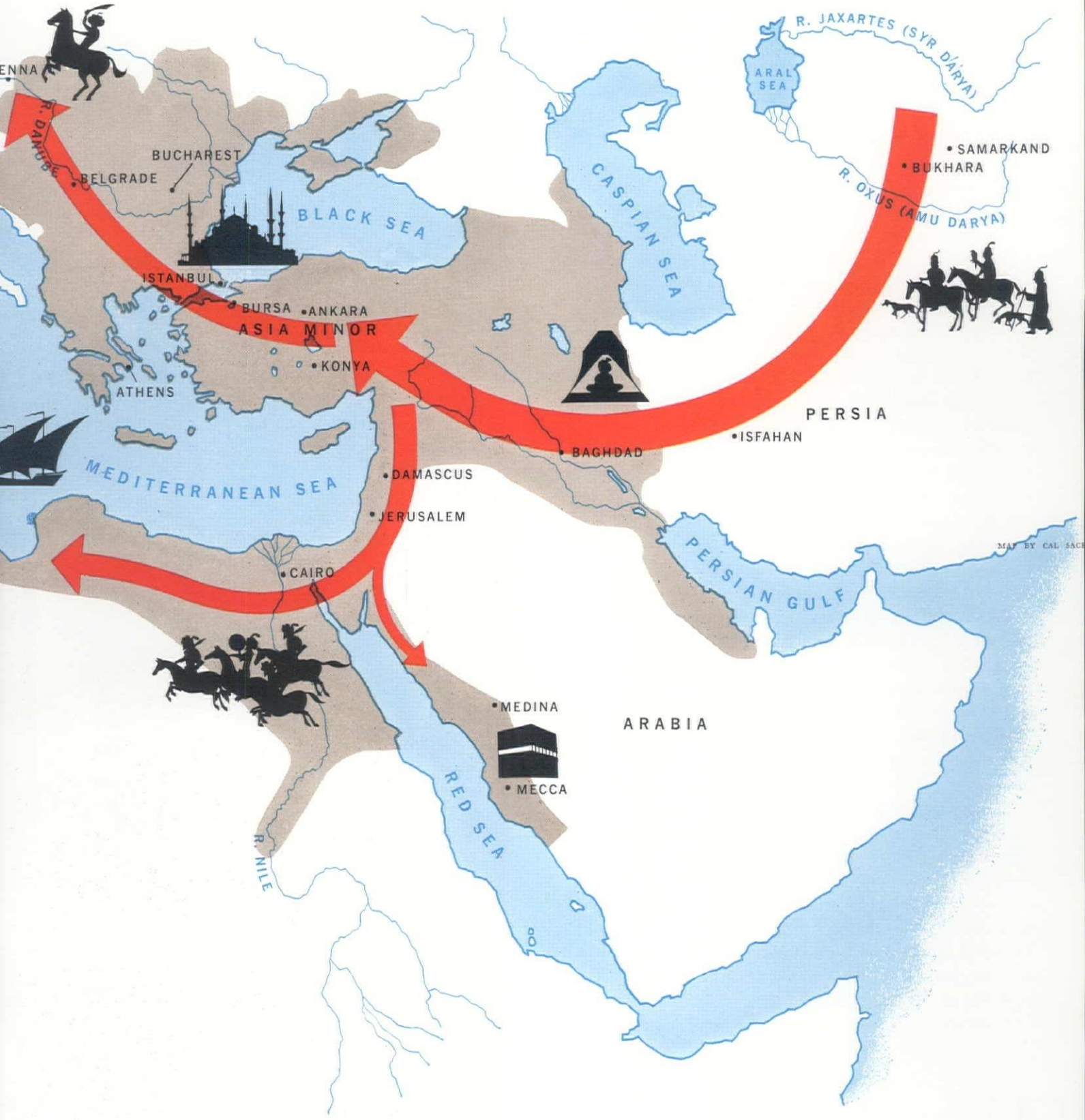
By the end of the seventh century the Turkish tribesmen were in contact with the Arabs, whose armies had penetrated as far as the Turkish towns of Bukhara and Samarkand. The Arabs found the Turks to be formidable warriors, and soon the palace guard of the Arab caliphs at Baghdad was composed of Turkish mercenaries. From being the caliph's servants, they became his masters. By the ninth century the Seljuk Turks—tribesmen whose chieftains claimed descent from an ancestral hero named Seljuk—had made the caliph into a figurehead. In 1055 they took over most of the great Arab empire for themselves; a few years later, in 1071, they defeated the emperor of Byzantium at Manzikert in Asia Minor and began settling in that country. Shortly before the year 1300 a few hundred families of another Turkish tribe left their central Asiatic pastures near the river Oxus to settle in the domain of their Seljuk kin. Under their leader, Osman, they soon moved into western Asia Minor, and as the Seljuk empire broke into fragments, they extended their sway to gain control eventually over the entire region. Osman's descendants, the Osmanli or



THE EMPIRE OF THE SULTANS

At its height in the seventeenth century, the Ottoman Empire extended over three continents. The Turks controlled Islam's central shrine, the Kaa'ba, at Mecca. Their armies reached as far into Europe as Vienna and their navies dominated the eastern Mediterranean. From all parts of the empire—including North Africa where the sultan exerted only tenuous control—tribute streamed into the imperial capital of Istanbul.

The illustrations shown on these pages are selected from The Treasures of Turkey, *which is to be issued in September by the Swiss publisher Albert Skira. The volume, the latest in the "Treasures of the World" series, is devoted to eight millenniums of Anatolian art and depicts many of the objects displayed in the American exhibition. Scholars from three nations, including Richard Ettinghausen, the American authority on Turkish art, collaborated on the text.*

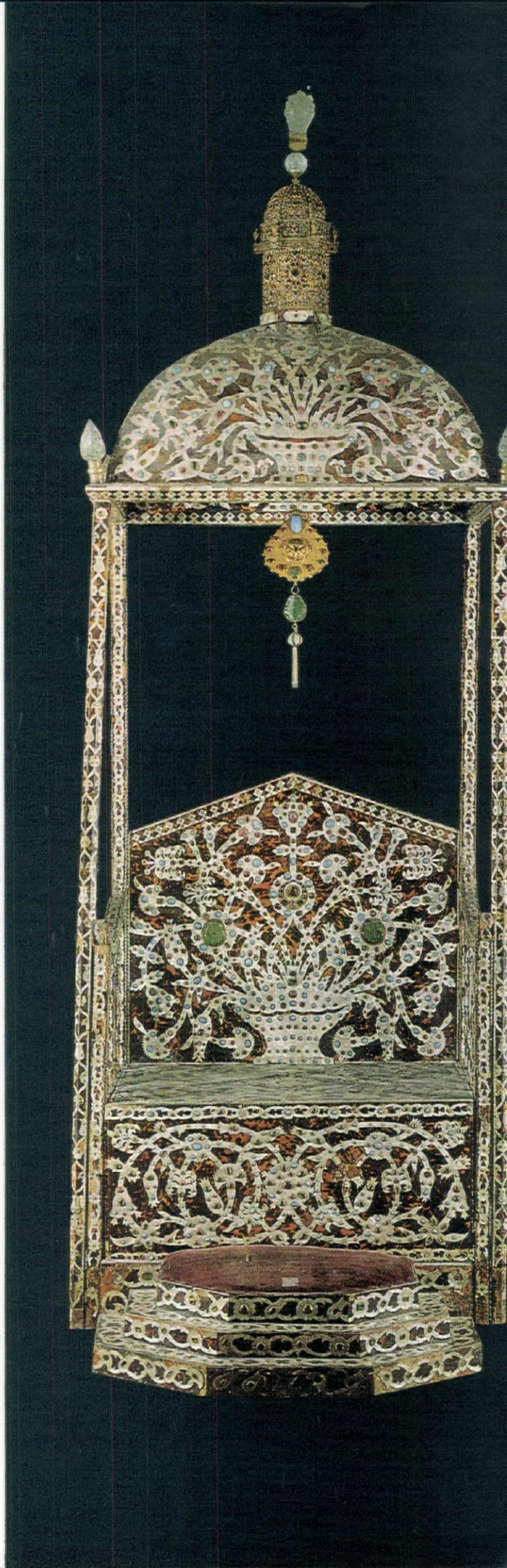

ENNA
R. DANUBE
BUCHAREST
BELGRADE
BLACK SEA
ISTANBUL
BURSA
ANKARA
ASIA MINOR
KONYA
ATHENS
MEDITERRANEAN SEA
DAMASCUS
JERUSALEM
CAIRO
R. NILE
MEDINA
MECCA
RED SEA
ARABIA
PERSIAN GULF
BAGHDAD
ISFAHAN
PERSIA
CASPIAN SEA
ARAL SEA
R. JAXARTES (SYR DÁRYA)
SAMARKAND
BUKHARA
R. OXUS (AMU DARYA)

Ottoman sultans, continued to rule Asia Minor until the establishment of the Turkish republic in 1922.

One of the most famous of them, Mohammed II, captured Constantinople in 1453 and put an end to the diminished Byzantine empire. Once his capital was established there, he sent his armies off in all four directions. The swiftly moving Turkish horsemen returned victorious—and rich—and the sultans soon ruled an empire on three continents. Osman's descendants led glorious but dangerous lives. Whenever a new sultan ascended the bejeweled imperial throne, he had his brothers strangled to rid himself of rivals. Later, when the Turks became more civilized, the sultan's brothers—and often his sons—were merely imprisoned in cages, next to the royal harem, to keep them from mischief. But whenever one of them was lucky enough to reach the throne, he could style himself: "Sultan of the Sultans of East and West, fortunate lord of the domains of the Romans, Persians, and Arabs, Hero of creation . . . Sultan of the Mediterranean and the Black Sea, of the extolled Ka'aba and Medina the illustrious and Jerusalem the noble, of the throne of Egypt and the province of Yemen, Aden and San'a, of Baghdad and Basra and Lahsa and Ctesiphon, of the lands of Algiers and Azerbaijan, of the region of the Kipchaks and the lands of the Tartars, of Kurdistan and Luristan and all Rumelia, Anatolia and Karaman, of Wallachia and Moldavia and Hungary and many kingdoms and lands besides . . ." Turkish royal politics being what they were, it was a fortunate sultan who stayed on the throne long enough to memorize, or even recite, this formula.

The court artists who were called upon to depict so august and all-powerful a personage had a difficult task. They showed the sultan bigger than the people around him, his rich robes billowing out to fill an inordinately large share of the picture space. The painters, like almost everyone else who lived and worked in the Grand Seraglio, the enormous royal palace at Constantinople, were his slaves, about on a level with the servant who carried in the clock when the sultan wanted to know what time it was, or the man who bore an extra royal turban in public processions and bobbed it up and down to save the sultan the trouble of acknowledging the applause of the populace.

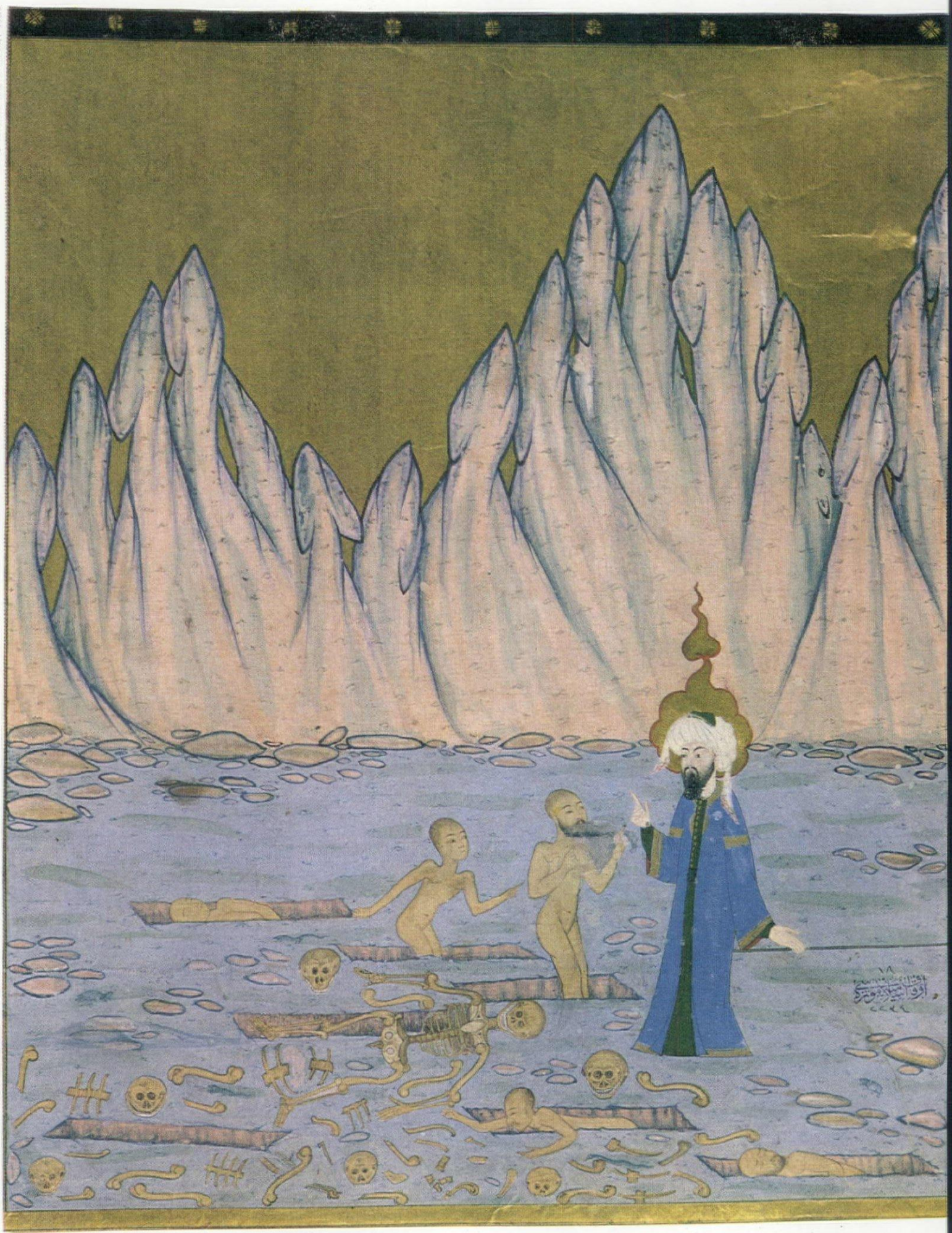
A number of the painters came from Persia, for the Turks then thought of that country as the home of art,



The imperial throne (near right), made for Ahmed I at the beginning of the seventeenth century when Ottoman power was at its height, was adorned with jewels, tortoise shell, and mother-of-pearl. The huge emerald suspended above the sultan's head symbolized his glory. The gold-inlaid helmet (far right) dates from the previous century, and was worn by an important personage at palace ceremonies. Below it is a gold-and-jade hand mirror studded with emeralds and rubies.

SKIRA ART BOOKS





SKIRA ART BOOKS: OPPOSITE AND OVERLEAF: SAME

much as Americans not long ago considered France. Persian miniatures, which earlier had been influenced by the art of Turkish central Asia, now influenced Ottoman art. Yet there were differences, many of them traceable to old Turkish traditions, inherited from the art of tribal days. The costumes depicted, the shape of mountains in landscape paintings, the postures of the sitters—who were usually shown seated with legs crossed, almost in the pose of Buddha—recalled the art of central Asia rather than that of Persia. The Persians used a wide range of delicate colors. The Turks employed fewer colors, but they were generally bolder. The Persians painted amorous scenes and gardens, or depicted the legendary exploits of ancient heroes. The Turks, more realistic, painted cities and soldiers, tradesmen and public festivals.



Persian influence on Turkish art was supplemented by Western influence. In the year 1479 Mohammed II asked the Venetian Senate to send him a qualified portrait painter. The Venetians exported Gentile Bellini, who provided the sultan with a number of portraits and with erotic pictures as well. Bellini soon left, terrified—as one story has it—when the sultan, who was dissatisfied with his picture of John the Baptist, decapitated a slave in his presence to show him what a severed head really looked like. But even after Bellini's departure from the Ottoman court, Western influences remained.

Evidently the sultans maintained high aesthetic standards. Indeed, their standards were so high that they required foreign ambassadors to dress in robes of silver or gold brocade—supplied from the palace storerooms—before they were welcomed into the royal presence. But it was not aesthetic considerations alone that formed the royal art collection. Greed was also an important factor, for the Ottoman rulers acquired art the same way they did provinces or women for the harem. They were particularly eager to possess ingenious and beautiful machines. Queen Elizabeth I of England sent Murad III a mechanical organ "16 foute hie" on which "did stande a holly bushe full of blackbirds and thrushis, which at the end of the musick did singe and shake their wynges." He loved it. During the sixteenth and seventeenth centuries the sultans were the most powerful potentates in the world, and the custom that rulers have always had—and still have—of sending gifts to each other rewarded them considerably. The English sent gilt plate and beautiful clocks, the French parcels of Lyons silk. From Russia came bales of fur. Aside from gifts, there was booty. When the Turks conquered Cairo in 1517, and on several occasions when they invaded the Persian capital of Tabriz, they seized immense quantities of Chinese porcelain, whose influence is evident in the fine Turkish ceramics that were made in the sixteenth and seventeenth centuries. Much of the Chinese ware is—perhaps understandably—of the variety known as celadon, which was supposed to detect poisoned food by making it bubble and seethe. In 1922, after the last sultan was overthrown, a great store of porcelain was discovered in the palace, still packed in the cases in which it had come centuries before.

After the eighteenth century Ottoman power declined. The boundaries of the empire receded, and native art traditions decayed and all but disappeared, since artists now preferred to imitate Western work. The Grand Seraglio in Constantinople sank into decrepitude, as the sultan moved his home and his harem to palaces built in debased Western style. Nowadays one can gain only a faint idea of the splendor that the Seraglio displayed in its heyday. The brightly colored tiles, with their tulip patterns, remain; but most of the painted paneling and silk hangings have been destroyed or are rotting away. No trace is left of the sultan's famous tulip garden. The gold paving of the floor of the royal reception chamber disappeared long ago. The sultan's great firework displays, with their dragons, castles, giants, and representations of Noah's ark, and the stately processions of soldiers and dignitaries in robes of satin and velvet and cloth of gold, can now be seen only in the miniatures which depict royal ceremonies and public festivals. The crumbling palace, the miniature paintings, and a fraction of the immense collection of royal treasures are all that survive of Osman's ancient dynasty.

The Biblical prophet Ezekiel, his head surrounded by a flaming halo, is raising the dead in the sixteenth-century miniature opposite. Typical of Turkish art is the sky, which was generally painted gold in scenes of supernatural events. The handsome dish above was part of the royal collection. OVERLEAF: *The Constantinople of the Ottomans is depicted in this map from a sixteenth-century manuscript. The Bosporus is at the top, while the Golden Horn cuts through the center.*






El patriota D. Josè Olaya sirviò con gloria ala PATRIA, y honrò el lugar de su nacimiento.
Callao
D.n Josè Olaya
nacio en el pueblo de Cho-
trillos d' año de 1792: fue muy
distinguido p.r su singular pa-
triotismo: fue tan constante en el
enviado el año de 1825. p.r las auto-
ridades q.e se hallaban en el Callao
on correspondencias à esta Capi-
tal, q.e ocupaban los Españoles pre-
firiò el martirio y sufriò mil
palos y la muerte, antes q.e
declarar las personas de
quienes

JOSÉ OLAYA

News of Art:

A Latin American painter-patriot stands out in a huge show from south of the border

MUSEO HISTORICO NACIONAL, BUENOS AIRES



JOSÉ DE SAN MARTÍN

SR. ALFREDO BOULTON, CARACAS



SIMÓN BOLÍVAR

If the Spaniards, during their three hundred years of colonial dominance in Latin America, ruthlessly wrecked the ancient civilizations of the Aztecs, Mayas, and Incas, they at least laid the foundations of a new culture that would survive the various revolutions of the early nineteenth century and eventually develop its own nationalist colorations. Artistically, this culture adhered—until the Mexican renaissance of the 1930's—fairly close to the European Beaux-Arts tradition, complete with salons and government subsidization. But at the moment of revolt, it provided the revolutionary movement with intellectuals, administrators, and even painters like Peru's José Gil de Castro to record the dramatis personae of the liberation.

Gil de Castro—whose work constitutes an important part of a huge show entitled "Art of Latin America since Independence," which is now touring the United States—rejected the concurrent trends of neoclassicism and romanticism and developed the first consistent art style of the republican movement in Latin America. Direct, naïve, and openly admiring of his subjects, he combined a fastidious attention to the details of military dress—including the elaborate medal that the great Chilean liberator José de San Martín (upper right) received for winning the decisive battle of Chacabuco—with a patriotic fervor that helped him to re-create the famous "glance of an eagle" of Simón Bolívar, "the Liberator" (left), whom he probably painted from a French lithograph.

These same highly stylized elements are evident in Gil de Castro's portrait of the Peruvian martyr José Olaya (opposite). An Indian fisherman-patriot, Olaya achieved martyrdom in 1823, as the cartouche explains, by preferring death to betrayal. Captured by the Spaniards after he swam seven miles across the bay from Callao to Lima, he swallowed the message he was carrying and refused to inform on his fellow conspirators, even though he was tortured. Olaya is portrayed in festival finery and standing before the cliffs of his birthplace, Chorillos, still clutching the letter he was to deliver to the Illustrious Señor Grand Marshal José Bernardo Tagle, the Lima patriot leader.

Born in the last decades of the Viceroyalty, Gil de Castro became the official portraitist of Chilean society in the revolutionary period. In addition to painting most of the folk heroes of the time, he served as an artillery captain in Bernardo O'Higgins's Chilean Independence Army. Beyond that, little is known about him. The experts have not decided whether he was self-taught or apprenticed to a master of the old colonial school in Lima. Even the date of his death, about 1841, is in doubt.

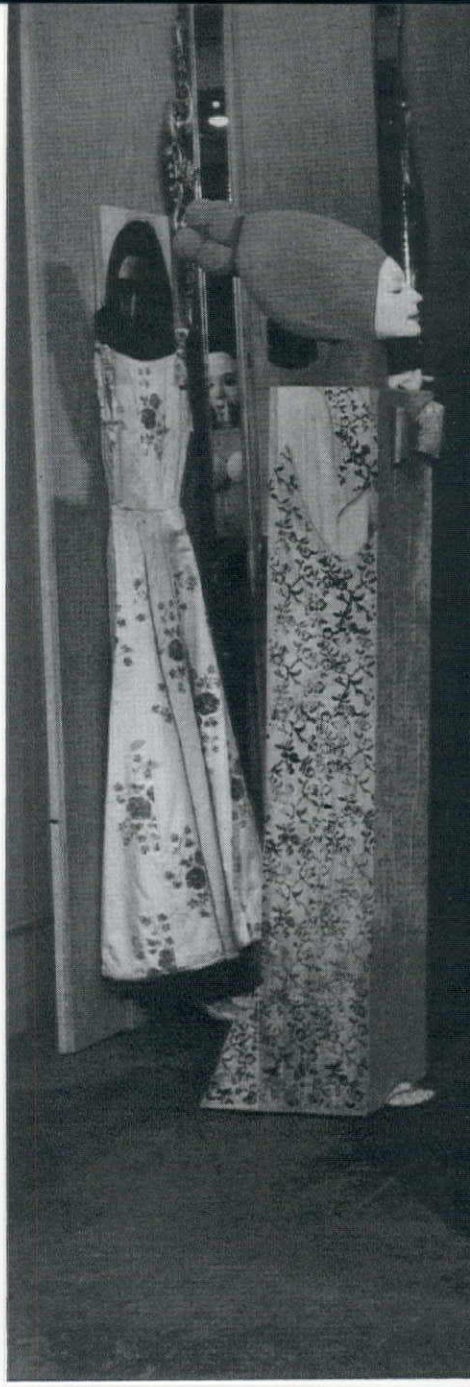
What is not in doubt is his importance as a painter in a vital and varied art epoch that has been generally neglected outside Latin America. To correct this and, at the same time, stimulate interest and research in the period, the traveling exhibition was jointly sponsored by Yale University and the University of Texas. Represented are more than 270 artists, ranging from post-colonialists like Gil de Castro to Victor Vasarély, who isn't a Latin but who worked briefly in Venezuela. The show opened in New Haven, went to Austin and San Francisco, and is now at the La Jolla, California, Museum of Art.

News of Art:

Cocktails, Commotion, and Creepies

Open the door of Edward Kienholz's *Back Seat Dodge—'38* and, in a blaze of triggered light and mirrors, you are transformed from viewer to voyeur. The interior of the truncated car is littered with beer bottles and cigarette wrappings, and features, *flagrante delicto*, a partial plaster girl in the embrace of a chicken-wire youth. The experience so unnerved officials in Kienholz's home town of Los Angeles a while ago that they almost vetoed his controversial show at the controversy-ridden County Museum of Art. "My wife knows art," explained one official, "but I know pornography." Only the firm resolve of the museum's trustees and staff, not previously noted for their unity of purpose, kept the exhibit open, albeit with the car door closed (right). The irony, if it is fair to impose still another level upon Kienholz's assemblages of junk, is that the artist is convinced he has executed a series of static morality plays—or, as he puts it, "three-dimensional social cartoons." His *Dodge*, for example, effectively destroys whatever "romantic nonsense" the next generation may harbor about its cherished mobile privacy. The intention behind Kienholz's social tableaux seems to be to confront the public with the frailties of man in his unnatural urban existence. Conceivably, Kienholz may someday attempt the ultimate metropolitan tableau, a colossal montage of neon, freeways, and air-borne wastes. He might even decide to call his creation "Los Angeles."

The one soiree that virtually no one in New York missed this year was *The Party* (right), given by the talented and amusing Marisol Escobar at the Sidney Janis Gallery. Composed of fifteen life-sized figures, all wearing variations—in plaster or plastic—of Marisol's own face, the exhibit coolly demonstrated the wooden sameness of such affairs, varied only by dress and affectation. It was so accurate, in fact, that opening-night guests had a tendency to meld with the figures, one into the other; where did *The Party* leave off and the party begin? Marisol, of course, demolishes with a mascara brush, not with a scimitar; as a result, her inventive mélange of wood, glass, fabric, paint, leather, and domestic objects conveys more affectionate mockery than acidulous indignation. Little imagination is required to envision the woman with the TV set on her head (right center, holding a glass) in animated conversation with the three-faced waiter at the next party; she is describing—what else?—Marisol's show, and the only thing needed to bring her vapid comments into focus is a slight adjustment of her antenna and her vertical-hold knob.



MARISOL: THE PARTY

EDWARD KIENHOLZ: BACK SEAT DODGE—'38



DWAN GALL

SIDNEY JANIS GALLERY, N.Y.

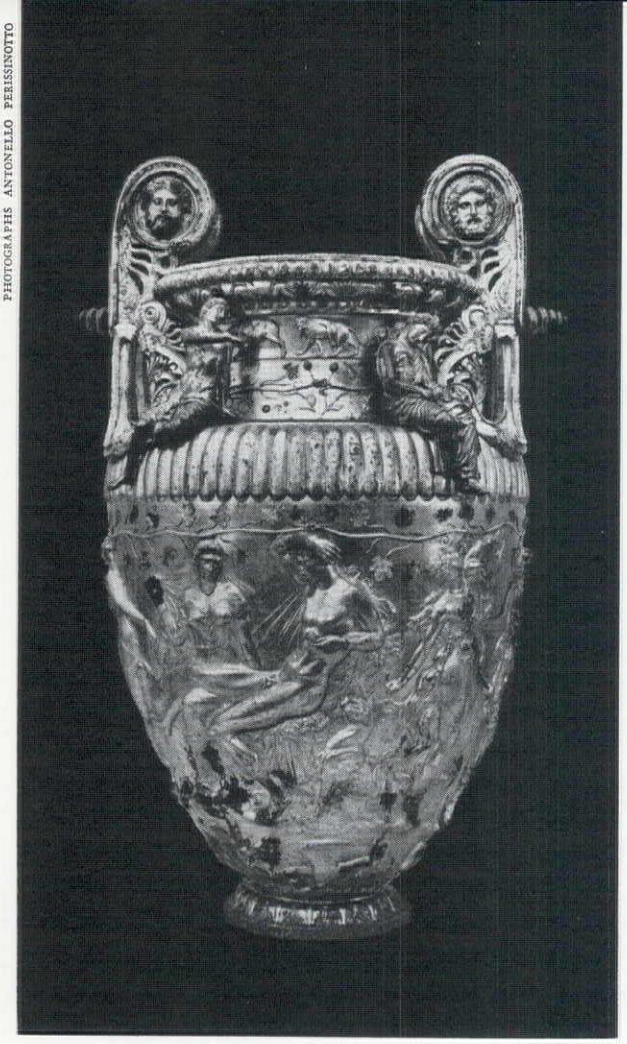
The day when the public had to travel to look at art may be ending, now that dynamic forms have been literally translated into motion; in their battery-propelled trek toward ever-changing interrelationships, these objects may eventually and perhaps inevitably seek out the viewer. Creepy? Not to sculptor Robert Breer, who built the motorized polyhedrons at the right. His styrofoam objects, coated with glossy white acrylic paint and programmed to switch direction whenever they encounter resistance, are intended "to put emphasis on the change of position rather than motion itself." The limitless possibilities of position were demonstrated earlier this year when one of Breer's larger "floats" had to be physically restrained from departing the premises of the Galeria Bonino in New York.

ROBERT BREER: FLOATS

PHOTO FRANCES BREER, COURTESY GALERIA BONINO, LTD., N.Y.



PHOTOGRAPHS ANTONELLO PERISSINOTTO



Seek and (with luck) ye shall find

Howard Carter, describing his sensations on ent
ing the tomb of Tutankhamen, confessed to a fe
ing of awe, which, he said, rapidly gave way
exhilaration, followed in turn by "pure joy," a
by "the strained expectancy—why not confess
—of the treasure seeker." Not many archaeologi
today would or could admit to being hunters
treasure. Inspired amateurs no longer unearth ent
cities; antiquities are no longer crated up and carr
westward in steamships. Archaeology has becom
science, and excavations are carried out by train
professionals. Thanks to their dusty labors, ma
kind's knowledge of itself has, during this centu
alone, been extended by thousands of years.

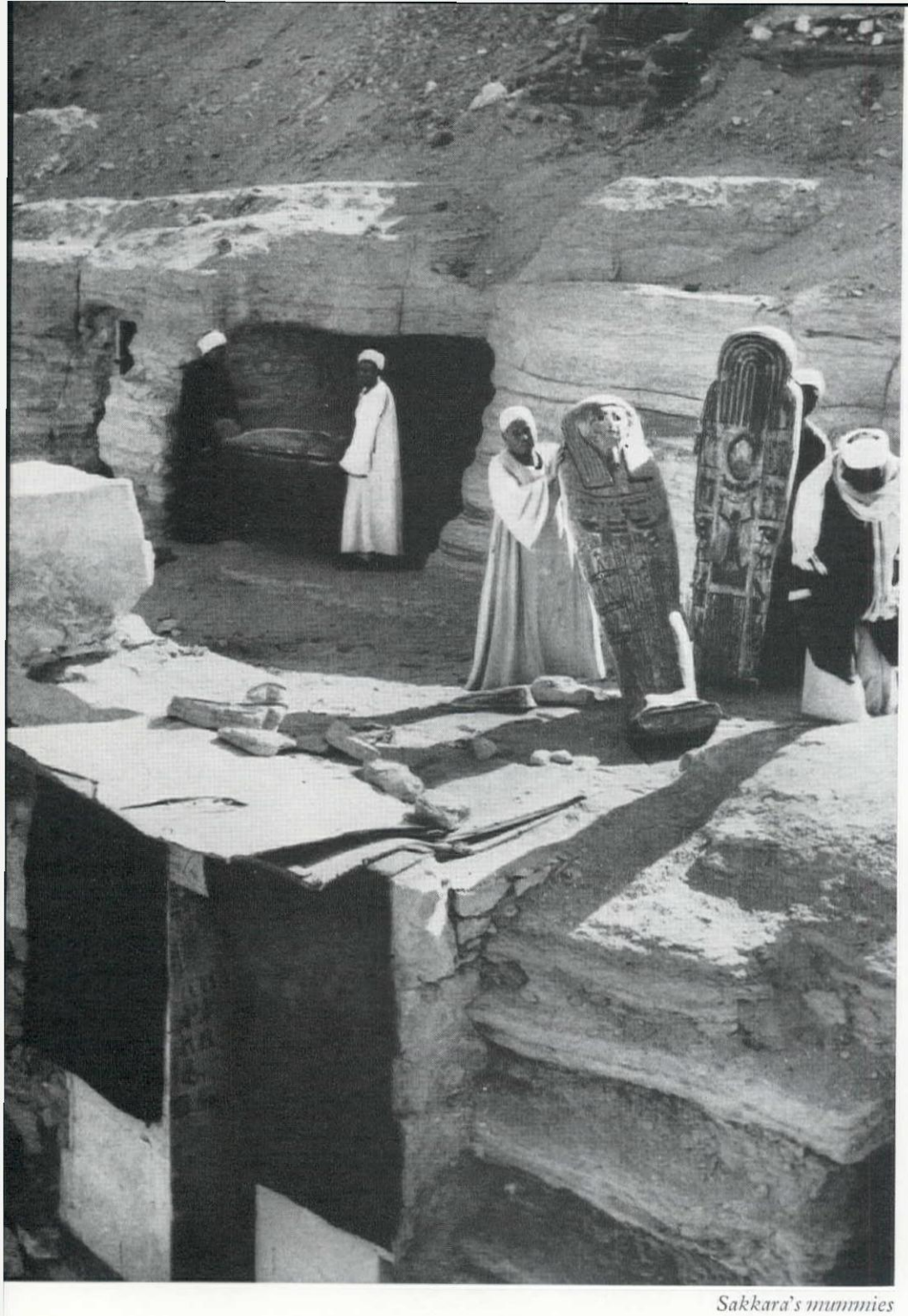
But inevitably, at least in the public mind, arch
ology *is* a treasure hunt. For whether he chan
upon a broken kitchen pot or a royal tomb, the
chaeologist is digging up not just objects but peop
The lost-and-found relics of ancient times ha
some of the same fascination for us as the diar
and snapshots and mementos we keep to remi
ourselves of what we once were. The recently u
earthed treasures shown on these pages are part
the collective mementos of mankind, part of t
new-found human heritage that archaeology is co
tinually presenting to the world.

1 *The road to Dherveni*

Four years ago constru
tion workers who we
widening a roadbed
northern Greece unexpectedly unearthed a tor
built solidly of limestone blocks. Archaeologi
from the museum at Salonika were quickly su
moned, and under the direction of Dr. Haralamb
Makaronas they opened the tomb and five oth
found nearby. Although miles away from any i
portant center, ancient or modern, these buri
nevertheless contained a royal hoard of gold,
cluding the giant vase, or krater, shown above a
in detail on the opposite page. Its age is unknow
for though the tombs contained coins which prov
them to date from the time of Alexander the Gre
the krater might have been old when it was buri
Three feet high and weighing eighty-eight poun
it is made of gilded bronze. Its reliefs, done in
deliciously exuberant (not to say florid) style, d
pict the marriage of Ariadne, daughter of Ki
Minos of Crete, to the god Dionysus. A satyr a
five bacchantes, two of whom appear in the det
opposite, frolic around the bridal pair. Four silv
statuettes perch on the krater's neck, one pair
either side of the handles. Christened the "Dherve
krater," because Dherveni is the town nearest t
site, the vase is a unique work of Greek art and o
of the most spectacular discoveries of this deca



On the krater discovered at Dherveni nymphs are shown disporting themselves at Dionysus's wedding celebration.



UPI

Sakkara's mummies

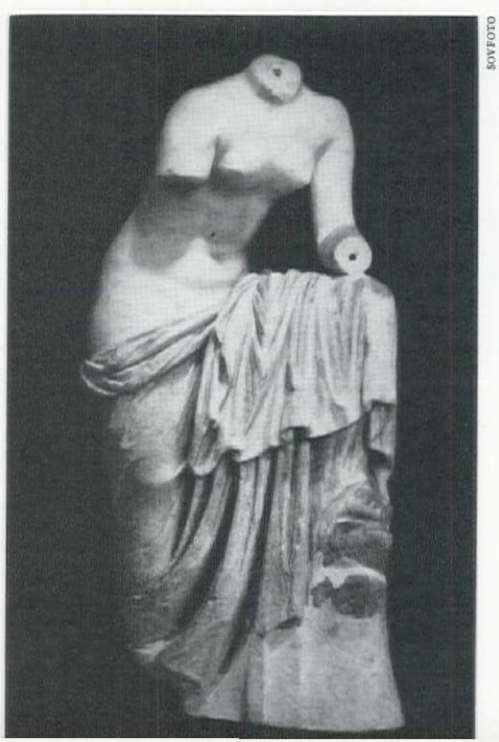
2 *Many mummies*

The occupants the two mumm cases shown at le just after they had been carried out in the Egyptian sunlight, were a cat breeder and a jeweler who flourished sor 4,500 years ago. They lived during t Fifth Dynasty (2500–2340 B.C.), when t Pharaoh's power was waning and sm businessmen had an opportunity to li well and be buried stylishly. The tomb the cattle breeder, adjacent to that of t jeweler, was found last December at Sa kara, which is about fifteen miles fro Cairo and is one of the most importa ancient Egyptian sites. Ahmed Mousa the Egyptian Antiquities Service open the tombs and in addition located a pa sageway beneath them which is thoug to contain 2,000 more mummies. T tombs are painted with vivid represent tions from everyday life (including t cattle breeder's recipe for keeping me fresh) and are expected to illuminate fu ther this period of Egyptian history.

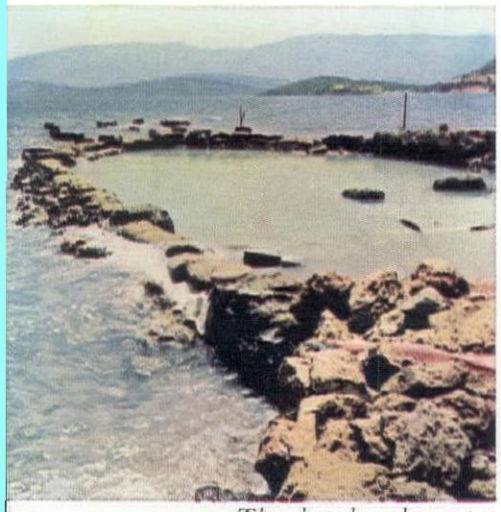
3 *Venus on the Azov*

Soviet archaeol gists toil as di gently as any, t their finds are seldom publicized in t West. The lovely statue of Aphrodite left was recently found on the Taman pe insula, which lies between the Black S and the Sea of Azov in southern Russ In about the sixth century B.C. the Gree established a colony there called Kep and the statue turned up in the ruins that city's temple to Aphrodite. Its di coverer, one Vladislav Dolgorukov, b lieves it to have been made in the thi or second century B.C., and therefore co temporary with the Venus of Milo. Tl statue may even have come from Mil for specialists in Moscow have stated th the stone is definitely Aegean marbl Exact comparisons of size have not bee released, but the Russian Aphrodite considerably smaller than her famous si ter in the Louvre. She poses casuall leaning on her left knee. Her head ar arms were not to be found.

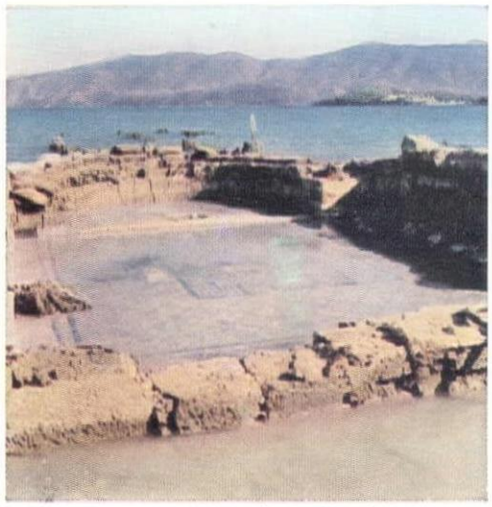
Russia's goddess of love



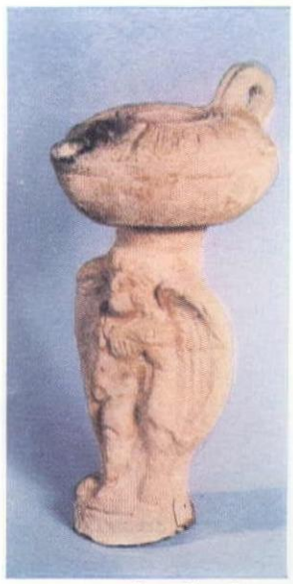
SOVFOTO



The church under water



After the waters have parted



PHOTOGRAPHS HASSIA

Standing lamp

4 *At the bottom of the harbor*

At Kenchreai, in Greece, American archaeologists have discovered the remains of a port that served the great ancient trading city of Corinth. Over the centuries the coastline had receded, and excavators had to build a dam of sandbags, covered with plastic sheeting, and then pump water away in order to investigate part of the site. To add to their difficulties, the remains of the town on shore had been partially dug up by World War II soldiers making trenches. But the archaeologists, scholars from the University of Chicago and Indiana University, found warehouses and harbor facilities, furniture and hundreds of coins, lamps and pieces of pottery, dating from six centuries before to six centuries after Christ. Above one warehouse they discovered a fifth-century church, the meeting place of a congregation which may have been founded by the Apostle Paul during his visit to the town. The most exciting discovery occurred in a room near the church—more than a hundred rectangular panels of stained glass, found with a block and tackle beside them, indicating that they were in the process of being installed or dismounted. Most of the panels that have been studied so far depict Egyptian landscapes, thus demonstrating the ties that linked Corinth with the East.

SHIRLEY TOMKIEVICZ



Lamp with a portrait



Cupid on a bit of tortoise shell



A portrait on ivory



Glass mosaic showing an ibis



Crocodile from the glass mosaic



Lamp showing Herakles

Catherine's Boat Ride

The Empress was showing off the wonders of her realm, and they were many indeed.

But were they real or were they fake?

Only Potemkin, the one-eyed giant, knew for sure—and he never said



DRAWINGS BY NICHOLAS SOLOVIOFF

By MARY DURANT

The year was 1787. The occasion was Catherine the Great's triumphal tour to the Crimea, the longest, most lavish, most expensive boating party in world history. Catherine's gold-plated tour lasted six months, entertained three thousand guests, covered more than a thousand miles, and cost seven million rubles, or roughly eighteen million dollars in present-day terms. And this was the journey that created the persistent and intriguing legend of the "Potemkin villages."

Were the charming towns on the riverbank painted façades or settled communities? Were the cheerful peasants local inhabitants or transplanted serfs whipped into their songs and dances? If the vision of prosperity was a brilliant hoax, was Catherine an accomplice or a dupe? The impresario of the tour, Gregory Alexandrovich Potemkin, commander in chief, governor general of the southern provinces, first prince of Tauris, Catherine's sixth lover and possibly her second husband, left no answers for posterity. And the guests on that royal procession to end all royal processions could not agree among themselves.

Catherine the Great, Empress and Autocrat, "Matushka," Little Mother of all the Russias, whose name has become synonymous with all that was lush and intemperate under the Russian monarchy, was born Princess Sophia in the threadbare Lutheran duchy of Anhalt-Zerbst. Because Frederick of Prussia refused to marry off either of his sisters to the future czar, Peter III, the proposal of marriage was passed on to Sophia, who was penniless but of suitable bloodline. In 1744 Sophia, not yet fifteen, arrived in St. Petersburg with one small trunk containing three dresses, a dozen chemises, a dozen handkerchiefs, a dress length of blue and silver brocade, and a cautionary letter from her father urging her to be meekly submissive to the royal family and to save her weekly pocket money.

Peter was a sadistic half-wit, but Sophia—by now rechristened Catherine upon her confirmation into the Orthodox Church—took to the intrigue and luxury of the court with zest. She learned her lessons well: purge or be purged. In 1762, six months after their joint rule began, Peter was deposed by a rising of the palace guard and assassinated shortly thereafter; Catherine—foreigner and usurper—was proclaimed Empress, a sequence of events which prompted a timeless observation by the French envoy to St. Petersburg, who wrote that the Russian crown was never gained by lawful succession but was always seized.

Catherine began her reign as an idealist and a visionary. Although surrounded by a court where few could even write their names, she remained an insatiable student, reading everything from Tacitus to Rousseau, Blackstone's *Commentaries on the Laws of England* to Montesquieu's *L'Esprit des lois*. She corresponded with Voltaire, d'Alembert, Dide-



rot, and the journalist F. M. Grimm. But the traditions of the Russian monarchy won out. Catherine the liberal, Catherine the radical, Catherine the Lutheran-born egghead, abandoned her republican sentiments and her plans for governmental reform and fell back into the accepted modes of paternal despotism and power politics. Her dreams of reform were replaced by dreams of conquest. She would shatter the Ottoman Empire, Russia's traditional enemy, and hand out tidbits of the Balkans to her European allies. She would create a new empire in the Near East with her grandson Constantine as the Orthodox ruler. And beyond the Ottoman Empire lay India!

Catherine was now in her middle age, a portly, extravagantly vain woman, whose tiny feet ached at supporting her heavy body. She was addicted to nicotine (her clothes were dusted with snuff) and caffeine (she began each day with five cups of black coffee). She was utterly indifferent to her cuisine and was merely amused if a palace dinner was burned and inedible. She adored her grandchildren, her pets, her *vremienchik*—"the man of the moment"—and gambling at cards. Above all, she loved to be amused and to laugh, sometimes diverting the court with a parlor trick of her own—the Empress could wiggle her ears.

Behind the scenes and on all fronts, aiding and abetting Catherine's whims, whether they were political, military, or amorous, was the one-eyed, nail-chewing, lowering giant, Potemkin. He was a man of extremes whose erratic temperament alternated between exultant enthusiasms and deep melancholy, excesses of the flesh and monastic retreat.

According to the story he himself told, Potemkin was first noticed by Catherine during her *coup d'état* against Peter. Her uniform as an officer in the Horse Guards was incomplete; she did not have the correct sword knot on her sword. Subaltern Potemkin gave her his own, and then, as it appeared, he had a certain charming—and not unnoticed—difficulty in persuading his horse to leave the Empress's side and return to its place in the ranks. Catherine spoke of Potemkin a month later as one of the men who "directed everything with discernment, courage, and activity." Thus began his advancement in the army, at court, and as a member of Catherine's intimate circle, where he delighted her with his impertinent but uncanny imitation of her strong German accent.

He rose rapidly through his successes in the first Russo-Turkish war, returned from his victories in the south as a general, and the opportune moment had arrived. Catherine was seeking a new favorite. In 1774 Potemkin became her lover and the foremost power in the empire. "He is one of the greatest, most bizarre, and most entertaining eccentrics of this iron age," Catherine wrote in a letter to Grimm. To



Potemkin, in the myriad notes they exchanged from one corner of the empire to another, she wrote: "My cossack, heart of my heart, my golden pheasant . . . I love you as I love my soul . . ."

But the limited, exacting existence of the court had not suited Potemkin's violent and feverish energies. It was not enough to prove himself in the alcove. Furthermore, the role of favorite was a tenuous one at best. By his own choice, he left the Empress's bed, preferring to maintain power through his gifts as a soldier, an administrator, and a statesman. He devoted himself to the newly won lands in the south, always leaving a judiciously selected favorite in his stead, and after the formal annexation of the Crimea, it was Potemkin who suggested the triumphal tour. The tour, which took four years of planning, would prove to the rest of Europe that Russia was able to develop and colonize and that the conquest of the Ottoman Empire was imminent.

On January 14, 1787, Catherine's traveling house party left St. Petersburg on the first leg of the journey, overland to Kiev, "Mother of Russian Towns." The Empress, her lady-in-waiting, Mme Protassov, and the current favorite, Mamonov, rode in an immense sleigh drawn by thirty horses. It had been built especially for the trip and contained a drawing room, library, and bedroom; it was big enough for eight passengers to move through it in comfort. The rest of the caravan followed in fourteen large sleighs and one hundred and eighty-four smaller ones (with forty in reserve)—ladies of honor, chief officers of the court, state dignitaries, foreign diplomats, and the retinue of the retinue. All guests received caps, muffs, and pelisses of sable. At each post station there were smiths and carpenters and five hundred and sixty spare horses. Because of the bitter cold, the road to Kiev—which took twenty-one days to reach—blazed in the late afternoon and evening with towering bonfires. Houses had been built or freshly decorated to receive the travelers and each house was supplied with new linen and plate. By edict, these could be used but once to serve the Empress; they then became the property of the household that entertained her.

Catherine, despite the journey, did not alter her daily schedule. She rose at six, worked with ministers and secretaries until breakfast, then received diplomats and courtiers until nine, at which time the caravan proceeded by sleigh through the winter scenery of the Russian countryside. Luncheon was served at two o'clock, there were several more hours of travel, and the sleighs arrived at seven, on schedule, for dinner and the night at a prearranged spot. Potemkin overlooked nothing, including the amount of tallow (five hundred pots) and the number of lanterns (ten) that lit each palace in which Catherine stayed. She usually



retired early, and beside her bed was an elaborate looking glass that concealed the bed of young Mamonov. At the touch of a button the looking glass slid aside, another of the thoughtful arrangements provided by Potemkin and reassembled at each of the stops during the entire trip.

In Kiev each foreign ambassador was provided with a palace, liveried servants, private coaches, and, for their diversion, an unceasing round of balls and banquets while they waited for the spring thaw when the Dnieper would be navigable. At the heart of the guest list were the diplomats: the suave and witty Prince de Ligne, advance envoy for Joseph II of Austria; the Comte de Ségur, accomplished Versailles courtier, statesman, raconteur, and poet; from England, Alleyne Fitzherbert, highly cultured but of a somewhat reserved nature; and from Vienna, Count Cobenzl, whose charm made him the most popular member of any society. Between planned festivities, impromptu storytelling, versemaking, and cards, conversation ranged widely—literature, philosophy, town planning, child education, and architecture—with Catherine initiating each topic, and skillfully seeing to it that the diplomats were fully informed about the regions through which they would travel. These were her foreign correspondents, her press corps, who would tell the rest of the world of Russia's achievements and future plans. However, she forbade talk of politics, and in a burst of warm feeling, declared that everyone should address each other by the familiar "thou." "I wish the whole of Europe might address me thus." But only de Ligne had the courage to speak to the Empress as "*Ta Majesté*."

As for Potemkin, entrepreneur without equal, his headquarters were in a bleak, ancient monastery, Petcherskaya Lavra, where he retreated in a black mood of depression. "The prince is slinking around looking like a wolf," said Catherine. Ségur described Potemkin in Kiev as "powerful and capricious . . . most usually dressed in a morning gown, open at the neck, his legs half-bare . . . lounging on a wide divan . . . nearly always pretending to be too busy playing a game of chess to notice the Russians or the foreigners who were arriving in his salon . . ."

On May 1, the merry band of voyagers set sail on the Dnieper in a flotilla of eighty ships, seven of which were sumptuous reproductions of Roman galleys. These were painted red and gold, their rooms were lined in brocade, meals were served on solid gold plate by attendants in gold-trimmed livery, and each had its own orchestra. Shipmates on Catherine's galley, the *Dnieper*, were again Mme Protassov and Mamonov. The second galley carried Fitzherbert and Count Cobenzl, and the third Ségur and de Ligne. On the fourth, Potemkin created his own court—that of an Oriental potentate. He loafed among Turkish draperies be-



neath a silk canopy and was attended by his harem of nieces —the five beautiful daughters of his sister Maria—each of whom was their uncle's mistress at one time or another. Or simultaneously. As this water-borne garden of delights floated down the majestic river, Catherine talked rapturously of restored antiquities, calling the Dnieper by its Greek name, the Borysthenes.

Potemkin's wonders unfolded on either hand. His enemies were astounded. The shores of the Dnieper were a vision of Eden. Prairies were covered with grazing herds of cattle and sheep attended by shepherds playing on pipes. Picturesque villages decorated with triumphal arches and garlands rose on either bank. Troops of soldiers in magnificent new uniforms maneuvered in the fields. At dusk happy, carefree bands of young peasants in holiday dress danced and sang at the river's edge. After nightfall there were illuminations and fireworks on the shore. Enroute to the Crimea the ships cast anchor at Kanev, Kremenchug, and Kaidak, where new palaces awaited amid shady parks, transplanted formal English gardens, artificial waterfalls, forests and vineyards, silkworms from China, and mulberry trees from Italy. Each village was prosperous, all the inhabitants healthy and scrubbed. "Is not my little household prettily furnished?" Catherine asked Ségur. "Do you not find it well and agreeably run?"

At Kanev Catherine had a brief, unsatisfactory meeting with Stanislaw Poniatowski, once beloved in her youth and placed, by Catherine, on the Polish throne twenty-three years before. Though Poniatowski was admiring, attentive, and clearly moved, Catherine was cold and aloof, and set sail the next day without seeing Poniatowski again. Potemkin was enraged at her behavior toward a valuable ally—and a sentimental ally, at that. But Catherine's personal emotions had overcome statecraft. The king of Poland, she told Potemkin, bored her.

At Kaidak Catherine was joined by her powerful neighbor Joseph II, and the two monarchs traveled the next day to Ekaterinoslav, "Catherine's Glory," a city founded in 1786 by Potemkin and already containing a palace, a silk-stocking factory, houses for workers and foremen, and two hothouses. Future plans included a university, an academy of music, law courts, a theatre, an exchange, twelve textile factories, and on a beautiful hillside, a cathedral that would outshine St. Peter's in Rome. The two monarchs inaugurated the cathedral, and Joseph, after the ceremony, said skeptically that Catherine had laid the first stone but he had laid the last.

The remainder of the trip was an exotic sight-seeing tour through the Oriental landscapes of the Crimea. Potemkin was in his element here, genial, extravagantly hospitable, witty, and brilliant. "We often thought we should die of



laughing, the count was so merry," de Ligne wrote. Potemkin led the guests to the harbor at Kherson where a new fleet of merchant vessels and warships lay at anchor and a signpost lettered in Greek proclaimed: "This is the road to Byzantium." Caravans of camels wound past; three thousand Don Cossacks galloped hither and yon on their swift horses; there were delegations of Caucasian princes and Circassian troops in silver robes on milk-white steeds. At Bakhchisarai, in the khan's fountain-cooled marble palace, Catherine mounted the former ruler's throne, and throughout the night an artificial volcano lit the Moorish gardens with its flames. At Sevastopol, during a reception, Potemkin flung wide the windows and the guests looked out on one hundred thousand men of the Tatar regiments. Beyond them lay the Black Sea fleet, whose cannon fired into the night as the massed sailors roared, "Long live the Empress of Pontus Euxinus!"

One last, brilliant display climaxed the tour. At Poltava two armies met in mock combat, restaging the famous battle in which Charles XII of Sweden was routed by Peter the Great. Joseph was at last impressed. He signed a secret treaty with Catherine against the Ottoman Empire; their alliance was now secure; the tour was complete. Catherine returned to St. Petersburg in July.

But Potemkin's detractors and enemies, motivated possibly by jealousy and fear of his intellect, energies, and supremacy over the Empress, cried fraud. The Dnieper valley, they declared, was an arid wilderness. The cattle and livestock had been transplanted; the dancing peasants were miserable serfs shipped in carts from one village to the next. It was charged that more than a thousand communities in Little Russia had been depopulated of their inhabitants and their flocks to create these Utopian scenes, and that on their long trip homeward most of these peasants died from fatigue and starvation. The little towns viewed from the safe distance of the red and gold galleys were no more than pasteboard cutouts, silhouettes against the May sky. Helbig, the envoy from Saxony, was responsible for most of these tales, and it was in his diplomatic reports that the phrase "Potemkin villages" originated. *Potemkinsche Dörfer* became a stock German colloquialism, a synonym of sham and deception, thanks to Helbig.

Early in the voyage, de Ligne had tried to discredit the stories. "They have already spread a ridiculous report," he wrote to France, "that villages of cardboard have been distributed along our route at intervals of a hundred leagues, that paintings of vessels and cannons and cavalry without horses are displayed . . ." But those hostile to Potemkin seemed to prefer Helbig's version of the voyage.

True, an edict had preceded the sightseers ordering all beggars, cripples, drunks, and infirm, all garbage and dead

animals, removed from streets through which the Empress would pass; all villagers to dress in clean clothes, the girls to comb their hair and wear flowers or ribbons; all markets to show fresh and appetizing produce; screens of birches to hide unsightly vistas; and all townsfolk to smile and appear cheerful in the presence of the visitors. But this was not so unusual, it was argued. Was it not comparable to dressing up the streets of any city for a triumphal procession under commemorative arches, with flags, costumed dancers, military bands, and soldiers in full spit and polish?

Joseph II, who peevishly described the Empress as "that Catherinized princess of Anhalt-Zerbst," contributed his share of suspicion and criticism: "The lord commands; hordes of slaves obey . . . in three years, fifty thousand persons were destroyed in these new provinces by the toil and the emanations from the morasses." His sweeping charge that twenty thousand lives were lost in the building and fortification of Kherson was never substantiated, and his sour remarks at Ekaterinoslav proved wrong. The city did become one of Russia's most prosperous industrial centers.

Catherine herself wrote a rebuttal to the charges against Potemkin: "The cities of Moscow and Petersburg, and even more so the foreign newspapers have invented a great deal during our trip. . . . when one has come from afar, lying is easy . . ." She went on to parody the slanders reported in the press and in diplomatic dispatches. She describes the Tauric mountains walking in a heavy gait to bow to her with "a languishing expression." She explains that this sort of fairy tale makes a far better story than the actuality of newly constructed roads that changed the impassable descents of the Tauric mountains into "comfortable slopes."

Although she made no further or more detailed reply to Potemkin's enemies and her memoirs were incomplete at the time of her death, Catherine's one comment seems conclusive, particularly when considered with de Ligne's indignant denials of willful sham and eagle-eyed Ségur's outspoken admiration of Potemkin's achievements. There had been skillful stage effects and clever window dressing, but these were all in keeping with Catherine and Potemkin's inordinate love of ostentation.

While Potemkin's detractors were busy perpetuating the myth of the cardboard villages, nonetheless they could not deny that he had indeed founded Kherson and Sevastopol; built their harbors and the Black Sea fleet; colonized the southern provinces with Tatars, Kalmucks, Georgians, Serbs, Albanians, and Jews—each having their own regiment. Hospitals, schools, banking houses, textile mills, roads, and canals could not be explained away. And Potemkin's severest critics could find no fault with the choice food, the luxurious lodgings, and the dazzling boat ride down the Dnieper. Even the weather held. There was sunshine every day.



This is Mary Durant's first article for Horizon. *She is the author of two novels,* Quartet in Farewell Time *and* End to Patience, *published by Harcourt, Brace & World.*



Mother Ship will take care of you

A winter cruise is an excellent way to escape the traumas of decision-making. Besides, what other asylum provides therapy through shopping?

By WILLIAM K. ZINSSER

Not being Katherine Anne Porter, I don't feel that the two hundred and fifty passengers on our cruise ship represented every known strain of human folly, each of us a walking allegory as we placed bets on wooden horses or sought inner peace through shuffleboard. Oh, we had our little quirks—one man, for instance, ate every item of food listed on the menu because it was there. But in general we were just a group of average American men and women turning ourselves over, body and soul, for one reason or another, to that unique institution, the winter cruise.

My own reason, purely journalistic, was to find out what everybody else's reasons were. For never before have so many Americans gone on winter cruises. What was once a toy of the idle rich is now a common vacation for the common man, a symbol of America's new affluence and leisure, and every fall and winter the steamship companies deflect more liners from the hostile Atlantic into the lucrative Caribbean trade. Even the staid *Queen Elizabeth*, which has loyally shuttled across the ocean for three decades, was recently fitted with a pool and "lido deck" for the cruise business, and judging by the popularity of that business, she will not lack for customers. Between October and April an estimated three hundred ships will sail from New York or Florida on Caribbean cruises, carrying at least 150,000 passengers and working very hard to keep them entertained. How the passengers and the crews and the ports survive this strenuous game—and whether it provides the therapy that the tourists are seeking—is what I wanted to learn.

My wife and I had never been on a cruise, nor did we know anybody who had. In fact, every person who heard of our plan was quick to offer sympathy. We were assured that the trip would be horrible, that great injections of fun would be shot into us at all hours, and that we would jump ship at the earliest chance and fly home. With this bleak counsel in mind, I chose my ship with care and settled at last for the *Santa Paula* of the Grace Line.

I saw that its cruise lasted only twelve days and made six stops—ample relief on land for those in peril on the sea. I saw that it carried two hundred and fifty passengers—not so many that I would feel lost, not so few that I would get stuck. And I found that Grace has been cruising these waters for forty years and is more conservative than the rival lines which are trying to capture the cruise trade by providing glamorous floor shows. At least on a Grace ship I felt that I wouldn't be routed out of my bed at midnight to hear "Hello, Dolly!" by a sister act and vibraphone trio straight from Las Vegas.

As a Grace official explained, "If a man wants to spend two weeks sleeping in a deck chair, that's O.K. with us—just as long as somebody takes his pulse once a day."

We sailed from New York on a Friday night and our first stop was to be at Curaçao, in the Netherlands Antilles, on Tuesday afternoon. During those four days the crew left no bingo card unturned to help us all get acquainted. The mimeographed program that we received on Saturday morning was proof of the busy world that lay beyond our stateroom door. It began with "6:30 A.M., early risers' coffee on deck" and continued at full steam until "1:00 A.M., 'Club Calypso' meets in the Techo Bar; join the fun with André and his accordion."



Between these extremes were nineteen other entries, including "informal travel talk," "complimentary group dance instructions," "informal card games," "horse races," "captain's cocktail party," "gala get-together dinner," "name bingo," and "get-together dance party." It was enough to make anybody go back to bed.

But I rallied to catch the informal travel talk, given by the chief purser, Frederick T. Lennertz. He began by introducing the social hostess, the entertainment director, the dance team, and various other crew members whose business was our pleasure. Next he told us about shipboard life and how to enjoy it, chatting in the avuncular tone of a headmaster welcoming the "new boys" to boarding school. Only then, when we all felt secure and cozy, did he proceed to a description of the first three stops on our itinerary: Curacao, La Guaira, and Aruba.

Never was there a talk which so precisely anticipated every question that a traveler might be nursing. I don't mean that he told us the history of these islands and ports—we never did hear how the Dutch and the Spanish settled them, or how they are ruled today. What he did tell us was how to reach the shopping district, what kind of money to take, what kinds of items to buy and to beware of, how much we could bring back to the United States, what to wear, what to photograph, what to eat, how to send postcards, how to get back to the ship, and how to take any of the Grace tours in which prearranged cars would drive us to prearranged points of interest.

Did I resent all this coddling—I who have traveled in remote corners of Africa and Asia, always making my own plans, prizing my independence? I loved it. It was boarding school all over again. It was checking into a hospital with nothing really wrong. Though I knew that a day would come when we would shun Grace's organized help and tour some island alone, on that first morning I glimpsed my first major truth—perhaps *the* major truth—about winter cruises and their basic appeal. Mother Ship will take care of you. No decisions are required.

"Most people nowadays don't know what they want to do," Lennertz told me later. "All year they have been doing fairly automatic work—selling, typing, answering phones—and they no longer have the initiative to do anything themselves. For many years on these cruises we didn't list the different activities that we had going on. We were wrong, and so we list them now: people resent it if you don't announce that there's trapshooting at ten and dance lessons at eleven and a ping-pong tournament at twelve, and many of them run from one to the other all day long. I remember one afternoon the bell rang for a fire drill, and a woman came up on deck and said 'What's this, the cocktail hour?' She thought even the cocktail hour had to be announced by a bell.

"People are disappointed at not being pushed. You can see that in all the cruise advertising—every line makes a point of emphasizing the number of organized events on board. The fact that the public knows in advance that they're going to be told what to do is a big factor in getting them to make the trip."

Obviously the personality of cruise passengers will vary with the personality of every ship. Seven-day cruises to Nassau, for example, draw a young crowd interested in late hours, noisy revels, and lo or one of its facsimiles. Cruises on 900-passenger liners that pri themselves on "taking Broadway to sea" will attract people wl don't want to leave Broadway behind, even though they claim to trying to get away from it all.

On our ship the passengers were mostly couples of middle age ar older, many from the Midwest, who liked to stay up dancing b didn't like the professional entertainment that was hurled at the two or three nights a week. (Grace never had "entertainers" un last season, when it yielded to the competition in the winter crui industry, which now books a half-million dollars' worth of tale annually.) A surprising number were repeaters. I found several wh take the cruise every year, and some who even take it twice, evident not tiring of the same routine and the same ports of call. I even hea of a retired colonel who used to sail on the *Santa Paula* four times year, reserving one cabin for himself and one for his nurse. His dea not long ago was more than an emotional loss to the line.

"They're like people who go to the same hotel or resort eve year," Lennertz pointed out. "People are hungry to be recognized they're flattered if the maitre d' at a restaurant knows them. Th most important thing that a social hostess can do on a ship is just g around and talk to people. People are very lonely."

Many women go on cruises who have just lost their husband, just ended a long marriage, or who just want to think some proble through. Doctors are also frequent cruisers, there being no sur way to elude their patients and their phone. Some form of escap in fact, is at the heart of every cruise. The motive may differ, but is almost always strong. For the cost is high and the time is shor and at the end there's nothing to show for it except a tan, a few souv nirs, and some photographs of islands whose very names have fade

Getting a tan was the first real business of the cruise. It made ir finitely harder the efforts of the purser and his staff to see that w all became friends, for a person befriended on Saturday, when th weather was still cold, changed appearance on Sunday or Monda when the ship entered warmer latitudes. Sedate men came to th swimming pool abloom in gaudy "cruisewear" and big straw hat wholly metamorphosed. White skins turned red or disappeared be hind plastic nose guards and protective creams. Ladies found coun less ways of going incognito. On the sun deck their heads wer enveloped in fluffy "coiffure bonnets," sold to them by the ship hairdresser so that his handiwork might not be visited too roughl by the winds of heaven. Then, after dark, the bonnets came off, re vealing a hairdo unlike anything that the lady had worn the nigh before—or ever before.

"I can get them to be a little more daring," said Frank Melor *coiffeur* in the beauty salon and one of the busiest men on the ship "Very few women will object to this because they're away from thei neighbors or anybody who might criticize."

Going to the hairdresser was almost as big a pastime as getting tan. "Most women have two shampoos and sets per trip," Melo said, "and comb-outs in between. Like they want a comb-out fo





nore. Or they'll have their hair done casually in the morning, and nen if there's something formal coming up, like the captain's party, ney'll drop in for a formal comb-out. That way they don't have to ght the elements so much. And of course there are many ladies who ome in just for something to do. They're tired of the horse racing nd the bingo and they want a change."

The beauty salon was well supplied with props to help the women n their uneven battle against the sun and air. "Wigs and wiglets are i lifesaver," Melon said, "because we can do a hairdo for a lady and n three walks around the deck it's out again." (This explained why certain ladies' heads seemed to expand or shrink from one evening to another.) "Still, I like to work on dried-out hair," Melon added. "It'll tease better."

A third big pastime was dancing—or, rather, imposing dance essons on men who had no intention of taking any when they came iboard. "In the first days of a cruise," said the entertainment di-ector, Lee Sullivan, "whatever people do best, they do all the time—whether it's drinking, or deck tennis, or bridge. The job is to get hem to do something else. Those games that we organize to get everybody acquainted—nobody wants to participate in them. *I* certainly wouldn't. But people do participate. Subconsciously they're eager to be helped. They get embarrassed if they're not told what to do."

So pliable were the men, in fact, that every morning I found a large group of them on the dance floor, along with their wives, learning from Sally and Karl Carver the merengue, the bossa nova, the cha-cha-cha, and other alien steps. "Slow-slow-quick-quick-quick," called Sally to her straining pupils. "Now back to your basic. Remember? Very *good*!"

"Their wives drag them up here for lessons," she said, "and the men assure me that they can't dance. But we give them something they can get up and do right away and they're so surprised and delighted that they're hooked. The most important thing I can do is to teach a man to lead. Most American husbands are so pushed around by their wives that they've completely forgotten that they're supposed to lead. When they rediscover it you'll often see their whole personality change for the remainder of the trip."

At night I saw what she meant. Husbands whom I had watched in the morning, clad in sports clothes and struggling to master the merengue, were now suave in evening dress, squiring their wives through the tricky Latin rhythms. It was a travel advertisement come to life, complete with all the adjectives about tropical evenings and moon-streaked seas. Except that the faces of the men were knitted in concentration and it was almost possible to hear the whirring of machinery in their heads: "Slow-slow-quick-quick-quick. Now back to your basic. Left-right-and-step-step-step. Very *good*!"

So the first days sped by, borne on the wings of busywork. The people were nice, and contrary to every prediction, we were having a good time. A small percentage of people were determined not to have a good time, resisting every helpful effort, and this was *their* way of having a good time. Thus everybody was happy except for those who got seasick—a turn of events that did not seem to have occurred to them in advance. For in every other respect taking the cruise was like going to a resort hotel, and the only difference was that the hotel had a tendency to heave and roll. Customers with delicate stomachs therefore found that they had paid good money for the meager privilege of lying on their bunk, meeting nobody, learning no merengue, having no strand of hair professionally teased.

By Tuesday morning, when Curaçao was due on the horizon, tension was rising among the passengers. Phase one, the get-together phase, was over, and an overwhelming need to go ashore afflicted everybody. This had been reinforced by a travelogue on the previous evening which stressed the bargains obtainable in the duty-free town of Willemstad. I heard several ladies say that they just couldn't wait to buy a lot of stemware.

The fever rose at midday as we sighted land and approached the town. By a quirk of geography, ships arriving at Willemstad sail right through the center of town along a narrow canal to reach the harbor behind, and this was too tantalizing for the passengers to bear, for they could almost touch the buildings on either side. The gabled old Dutch houses, all bright yellow with orange roofs, arrayed along the waterfront and tumbling back into little streets, added up to the sort of town illustrated in the Babar books. It was a toy town, and, best of all, it was full of shops.

How sluggishly the next half hour passed as our ship maneuvered into its pier, and when the gangway was at last attached the passengers flew down it as if shot from a cannon. Fanning out on the dock, scrambling for taxis, they were all gone within a few minutes, eyes agleam, travelers' checks at the ready. My wife and I, following at a speed that was merely normal, got to town twenty minutes after the first wave of passengers hit, but already the shoppers had done prodigious work. One had bought a diamond ring. Many were already laboring under parcels, and on every face pure happiness was written. Psychiatry couldn't have done half as much good.

One other cruise ship was in Curaçao that day, but already it was easy to tell *Us* from *Them*. Partly this was because some of our team were wearing straw hats that said HOWARD LANIN'S ORCHESTRA, given out by the ship's orchestra to spread the gospel of Laninism to the heathen on land. But mainly it was because we were old friends after four gregarious days at sea.

This was perhaps the oddest phenomenon of the cruise, this college-reunion atmosphere, unlike anything else in travel. Ordinarily the touring unit is a man and wife, or a family, and they go from place to place, reading about each country before they visit it, steeping themselves in its culture when they get there, and rarely meeting anybody they know. Here, however, we were suddenly disgorged onto a foreign island about which we knew little, and which we would soon leave again, and as we walked through the streets, we met, instead of native folk, our own native shipmates and heard, instead of the local language, the familiar cry of "Hi, there!"

Two stores were particularly thick with passengers from our cruise. One was Spritzer & Fuhrmann, where they were buying jewelry and watches, and the other was La Casa Amarilla, where they





were buying liquor and perfume. So aggressively were the tourists clustered at the liquor counter that I asked the store's owner if this kind of thing happened whenever a cruise ship arrived. He gave a philosophical nod. "I remember one day," he said, "when four cruise ships came to Curaçao. I went out on the sidewalk to say hello to a friend and I couldn't get back in."

Late that afternoon, all passion and considerable money spent, the passengers straggled back to the *Santa Paula*. The ship wasn't scheduled to leave until 9 P.M., but everyone was snugly in place by sundown and accounted for at dinner. My wife and I stayed ashore and ate at a Dutch restaurant on a hill overlooking the town, more toylike than ever amid the twinkle of lights. We were the only people who didn't come back on board for the evening meal, and our absence caused some worry. Mother Ship doesn't know what to make of tourists who snip, however briefly, at the umbilical cord.

The next morning we docked at La Guaira, the port for Caracas. With only a day to see Venezuela's lofty capital, most of us willingly signed up for the Grace tour, thereby avoiding further decisions. On the pier, we were assigned to cars with English-speaking drivers who took us, on a carefully timed schedule, to such sites as the birthplace of Simón Bolívar, the "pantheon" of Venezuelan heroes who fought for "the liberty," a museum, a hotel where we had lunch, and an immense new race track.

So abruptly were we plunged into this hustling metropolis that we might as well have dropped by parachute. It was bizarre, in a city of a million and a half strangers, to turn a corner and meet three people with HOWARD LANIN'S ORCHESTRA stitched across their hats, or to reach the bed where Bolívar was born and find those two nice couples from Iowa already there, like the bears in "Goldilocks."

As in Curaçao, there was no question of getting to know the place. The day was as insubstantial as a travelogue—a series of slides flashed before our eyes and just as quickly taken away. When the slide show was over, when our cars brought us safely back to our comfortable ship, not much remained: a taste of poverty, an aura of seedy militarism. Our eight-hour visit wasn't really arduous; certainly it was not as hard as the schedule that most American tourists impose on themselves when they are "doing" a foreign country. Yet it left everybody exhausted. Was it the altitude? Was it all the getting in and out of cars? Was it that the "points of interest" had so little interest? Or was it simply in the nature of any one-day stop at any port on any winter cruise—a shadow play with no life of its own?

Restored by dinner, we dutifully went that night to see a film about Aruba, our destination for the following day. "If shopping was too crowded in Curaçao," the purser said in his talk, "you'll have a good chance to catch up here. You just walk two or three blocks and turn left, and that takes you right into the shopping area."

My own impulse, after the organized rigors of Caracas, was to see Aruba unaided. Hearing that not many drive-yourself cars were available, I was the first person off the ship on Thursday morning and was met at the bottom of the gangway by a Hertz man. Few words were necessary. I wanted mobility, he wanted twelve dollars, and within five minutes my wife and I were on the open road, driv past palm-fringed beaches, stopping to swim in the lukewarm Car bean, picnicking on the sand, exploring small roads that didn't le anywhere. Now *that* was my idea of a cruise.

At one point our drive took us through Oranjestad, the chief to of Aruba. Smaller than Willemstad, it was nevertheless lined w shops, out of which our fellow passengers were streaming, lad with knickknacks of all nations. I went into one popular store to what the merchandise consisted of. The counters were piled hi with the kind of objects that are sold in the arcade under Rockefel Center, and I asked the owner where they came from. "I imp them from fifty-two countries," he said.

Later I heard passengers worrying about the trouble and possil extra expense of lugging these international souvenirs back hon especially if they were planning to go by air from New York. But the moment of purchase this was not the point. A bargain is a ba gain, and a free port is one of the best gifts that commercial man h ever bestowed on the opposite sex.

"Women love to shop," said the *Santa Paula*'s staff purser, "a the men just go along. As a matter of fact, in almost every case i the wife who initiates the cruise. The husbands leave it to them they're so used to having their lives organized anyhow."

To lift American men out of this dronelike state, and to persua more of them to take cruises, many ships now put an emphasis golf. They hire a professional, who gives "clinics" on deck, and th stop at a series of islands where golf is available. (There are al special cruises for bridge fans, conducted by such experts as Charl Goren; there are even tours for Presbyterians, with a minister pr viding "personal leadership.") Our own cruise had three golfe and at every port they hurried off the ship to follow their priva vision. I happened to ask one of them what he thought of Caraca "The fairways were all dried up," he said.

So ended three straight days on land, and except for the golfe everyone was pitifully grateful when Friday dawned and we face a full day at sea. It gave us time to work on our tans and to ha formal comb-outs. It also gave us time to write the postcards th we had bought in Curaçao, Caracas, and Aruba. This was importa for proving to our friends at home—and to ourselves—that we ha actually been there. Travel itself does not become a fact until it ratified by postcard.

With the cruise now half over, the ship's doctor began to breath easier. For him, once more, luck was outrunning the laws of prob bility. "It's amazing how people stop taking their medication whe they go on a cruise," Dr. Hal C. Geyer said. "They've escaped fro their doctor and all his rude implications of what will happen t them, and they live it up. Only the diabetics take their medicine. Th coronary and hypertension cases—and there are always a lot of the —forget all about it. There's one old lady on this trip with a hea condition, a typical example, who fainted in Aruba yesterday. I g her back to her cabin and she didn't even know where her heart pil were. It took us about twenty minutes to find the stuff. Now she begging me to let her go on the all-day tour of Jamaica tomorrow.





Dr. Geyer, who periodically warns passengers on the sun deck that they are getting too much sun, which they resent and ignore, pointed to an old man flailing through the swimming pool: "He's had any number of coronary attacks, and his stomach is big from overeating, and his skin is red from overexposure to the sun, and now he's going to climb up the ladder of the pool, which is one of the hardest things that you can do. I begged him to take it easy today—I *begged* him. I tell you, I haven't stopped believing in the age of miracles."

Saturday was Jamaica and Sunday was Haiti: only two more shopping days. Travelogues were again given to tell us what we might buy. "If you want Calypso records," the purser said, "just be sure that they're made in the West Indies, because a lot of them are made in New York."

The two days passed in a swirl of activity, so intense that most of the passengers later had a hard time remembering which island was which. In Jamaica our port was Kingston, but a large number of people signed up for a tour to Ocho Rios on the other side of the island—five hours of driving altogether, plus a two-hour lunch, swim, and "complimentary daiquiri." This meant that when they got back to Kingston late in the afternoon, tired, they still hadn't done their shopping and the ship was to sail at six. The pressure was on, but they were worthy of the challenge. Racing through Kingston's famous straw market like last-minute Christmas buyers, they staggered back to the *Santa Paula* dangling straw bags and hats and shoes of every size and shape, footsore but fulfilled. The rest of us had gone to the straw market in the morning and had spent the remainder of the day on drives into the surrounding countryside that were only semi-exhausting. Perhaps the one who survived best was a vivacious widow who went ashore only long enough to be photographed in Kingston and returned to the ship to work on her tan.

The next morning we docked in Port-au-Prince, Haiti. Last shopping day. We had all signed up for a Grace tour, having heard that the island was too intractable to be conquered alone, and by 10 A.M. we were off into the hills in our various cars. Stops were made at two churches, at a store that sold all kinds of Haitian brandy, at a store that sold all kinds of Haitian mahogany objects, and at a store that sold all kinds of Haitian paintings. Travelers' checks fluttered and pens flew, and when we finally stopped for lunch we were almost too tired to watch the prearranged show of authentic Haitian dancing.

It was a beautiful island, in its scenery and its people: exotic, African, and easily the most interesting stop of the entire cruise. Our orders, however, were to be back on ship by late afternoon, and one by one the cars trickled down from the hills to leave us at the pier. So much mahogany I have never seen as emptied out of the cars. There were mahogany figures almost as big as the people who had bought them. There were mahogany heads, mahogany bowls and cups, mahogany stools and benches and tables—on and on it came, husbands and wives tottering under the load. And still it was not over, for Haitian boys pressed around the burdened tourists, holding up more objects, and, miraculously, the tourists summoned a last free hand and a last burst of energy to buy one final memento.

Then, suddenly, it was all over. The chicks were safely gathered in to Mother Ship, and as the sun set over the mahogany trees we glided out of the harbor and set our course for home. On that Sunday night it was generally agreed that the cruise was a tremendous success. As one man put it, "I'm so tired that I'm going to have to take a vacation when I get back to recover from the cruise."

On Monday morning the rhythm of the voyage changed. It was only the tenth day, but the trip was essentially over and we knew it. Solid friendships of the first week unraveled without warning; people who had promised to visit each other in "The States" now knew that they never would. Still, the outward face of gaiety was maintained, the party kept alive. On Sadie Hawkins night the ladies obediently pursued the men and brought them to the dance floor. On costume-party night almost everyone turned up in costumes that they had made with materials provided by the ship or purchased in port. At the grandmothers' party, older ladies came armed with pictures of grandchildren and endearing tales. The entertainment director tried doggedly to entertain.

But the weather turned cold and the hard-won tans began to fade even before the ship left Fort Lauderdale, where it stopped for three hours on Tuesday morning. On Wednesday, according to the map, we were off the coast of North Carolina, a familiar contour of land exerting its pull on all of us Yankees who had dared try to escape to languid islands in the sun.

The men, in fact, were already starting back to work. Their fingers tapped at the bridge table, their legs swung in impatience, their faces withdrew from the merriment of Mother Ship. Mentally they were back at Mother Corporation, where, in another day, they would start another year of punctilious arrivals, departures, meetings, lunches, and coffee breaks, all in preparation for eventual retirement when they would receive, on a schedule so neatly prearranged that they would need give it no further thought, a series of pension payments and other benefits, enough to buy them the desperately social security of living among other "senior citizens" in a warm climate.

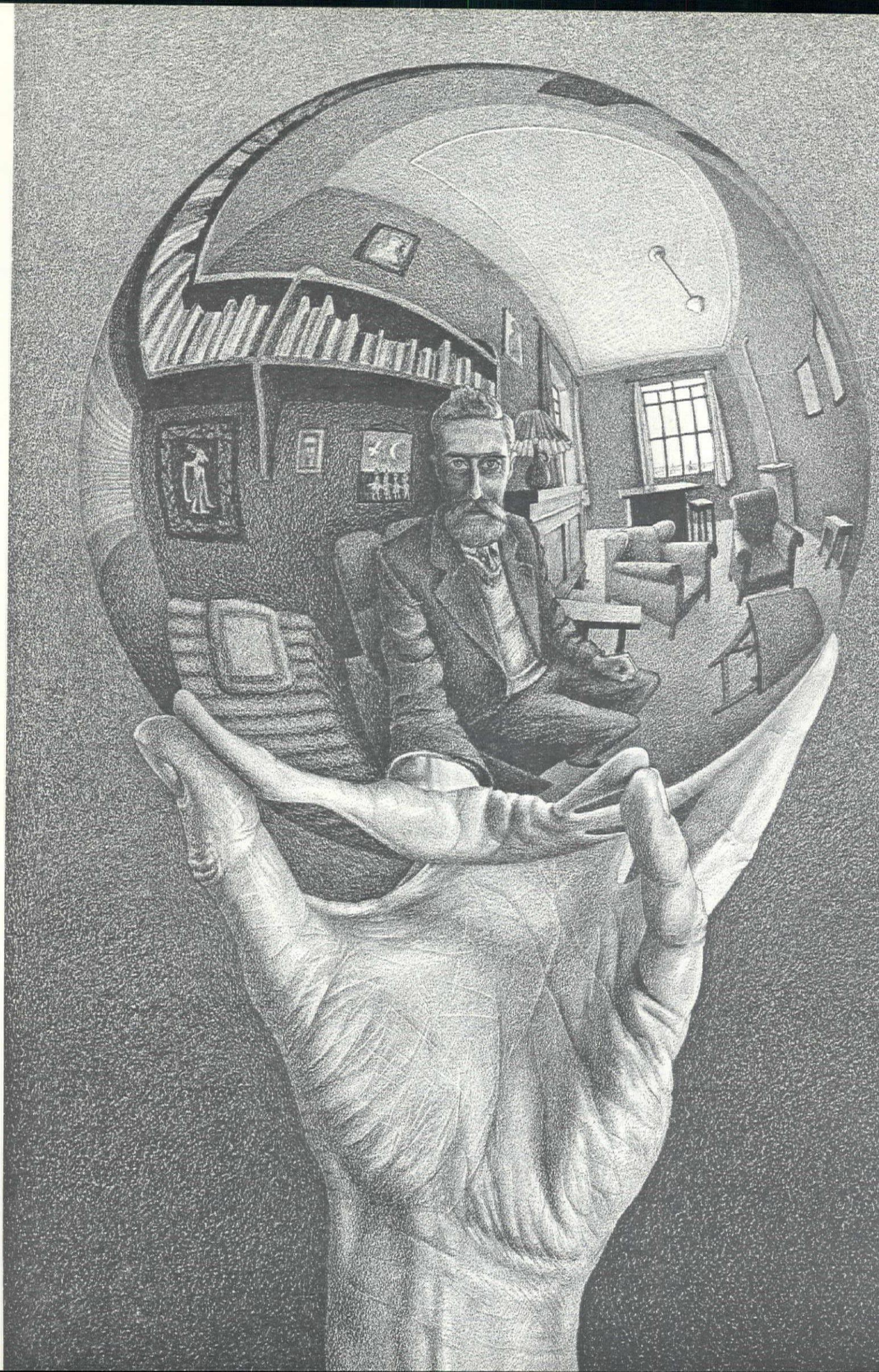
The ladies did not feel the pull of the American littoral so strongly. They had achieved therapy through shopping and were at peace. And yet even they were beginning to be nagged by a problem arising out of this very fact: what to do with the objects that they had bought? Where, I heard them asking each other, would they put the mahogany voodoo priest from Haiti, the Balinese mask purchased in Curaçao, the garish *piñatas* from Caracas? Now that their staterooms were so cluttered with these objects that they could hardly reach their beds, they wondered how to accommodate them in the "tasteful" suburban houses to which they were returning. The problem seemed insuperable, but a purser assured me that it wasn't.

"When they get home," he said, "they see that it's mostly all junk anyhow and they just throw it away."

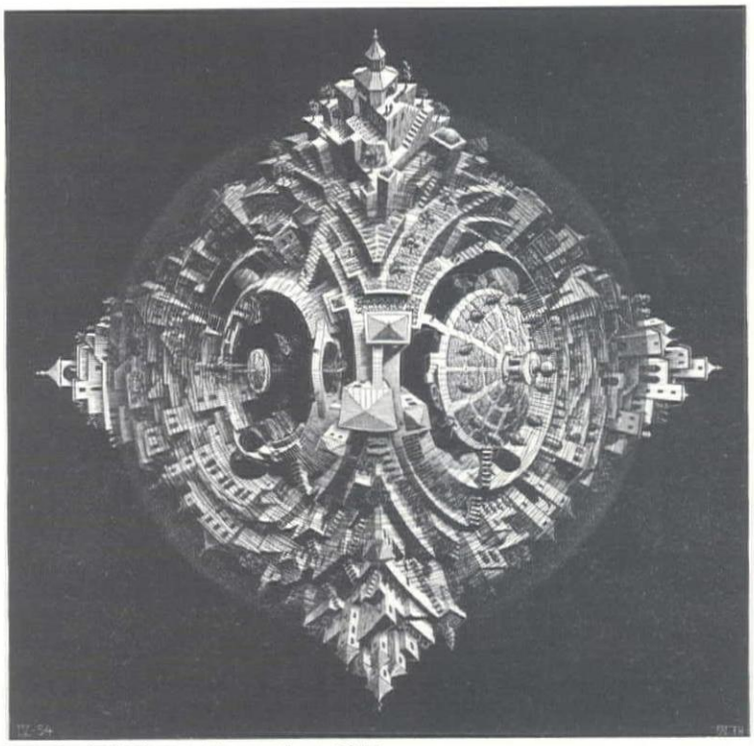
William K. Zinsser's newest book, Pop Goes America, *has just been published by Harper & Row. His most recent article for* HORIZON *was a survey of current American humor in the Spring, 1966, issue.*



DRAWINGS BY ROBERT VELDE



ESCHER'S EERIE GAMES



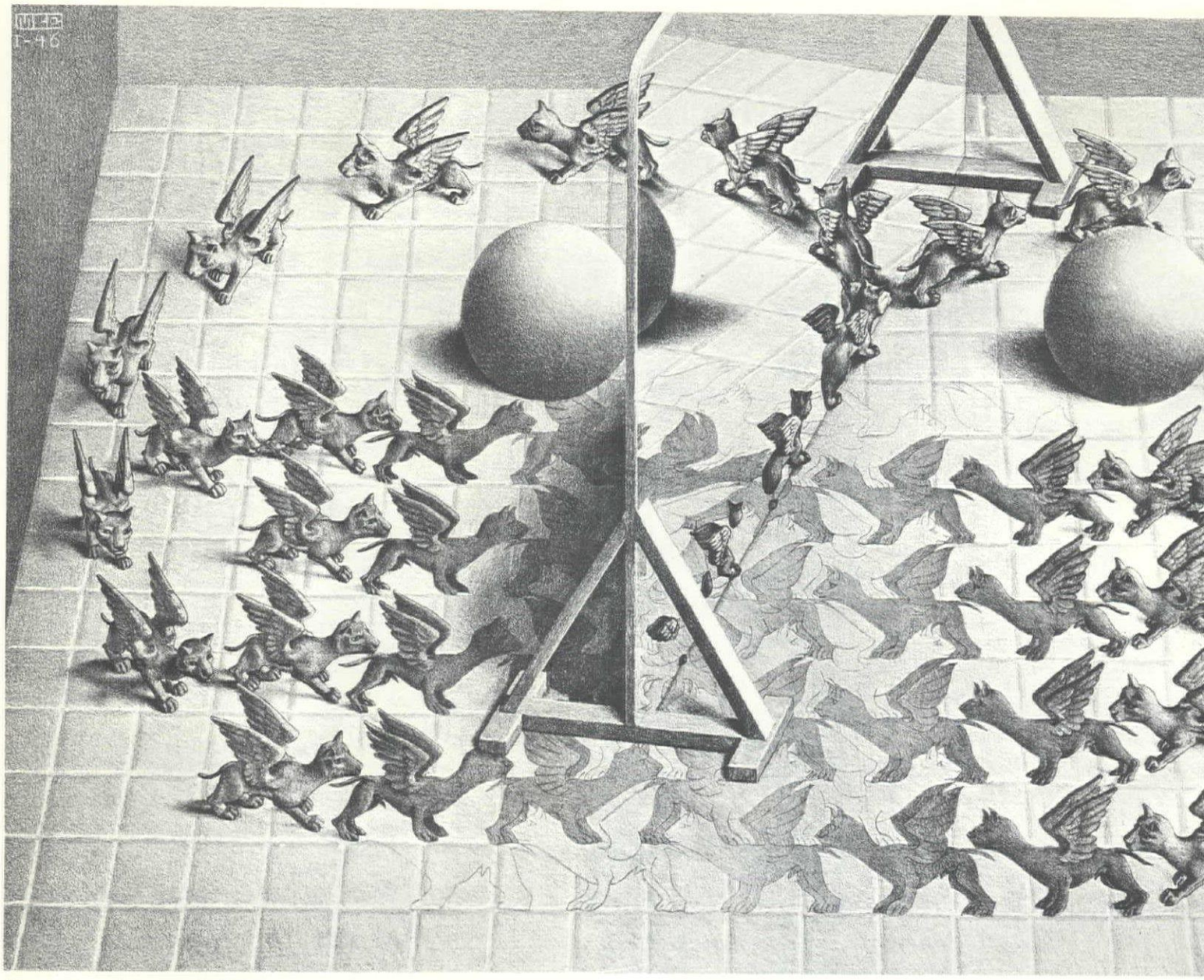
Tetrahedral Planetoid, woodcut, 1954

The lithograph opposite is a self-portrait of M. C. Escher, one of the most remarkable graphic artists of our day. In an Escher print there is usually more than meets the eye—at first glance, anyway. That "more" is the illustration of some mathematical or scientific principle, and often of a philosophical one as well. Thus, in the self-portrait, the artist has depicted his hand exactly as he would see it, but his face is reflected in a mirrored globe that also reflects much more of his surroundings than any normal eye could take in. Furthermore, the artist's face is trapped at the exact center of the circular image. "No matter how he turns or twists himself," Escher says, "he cannot get away from that central point: the ego remains immovably the focus of his world." More purely mathematical is the imaginary planet above in the shape of a tetrahedron (four triangular faces, of which two are visible). Because all of the "planet's" vertical lines point toward its gravitational center, the print has no top or bottom—it can be turned any way and still look the same.

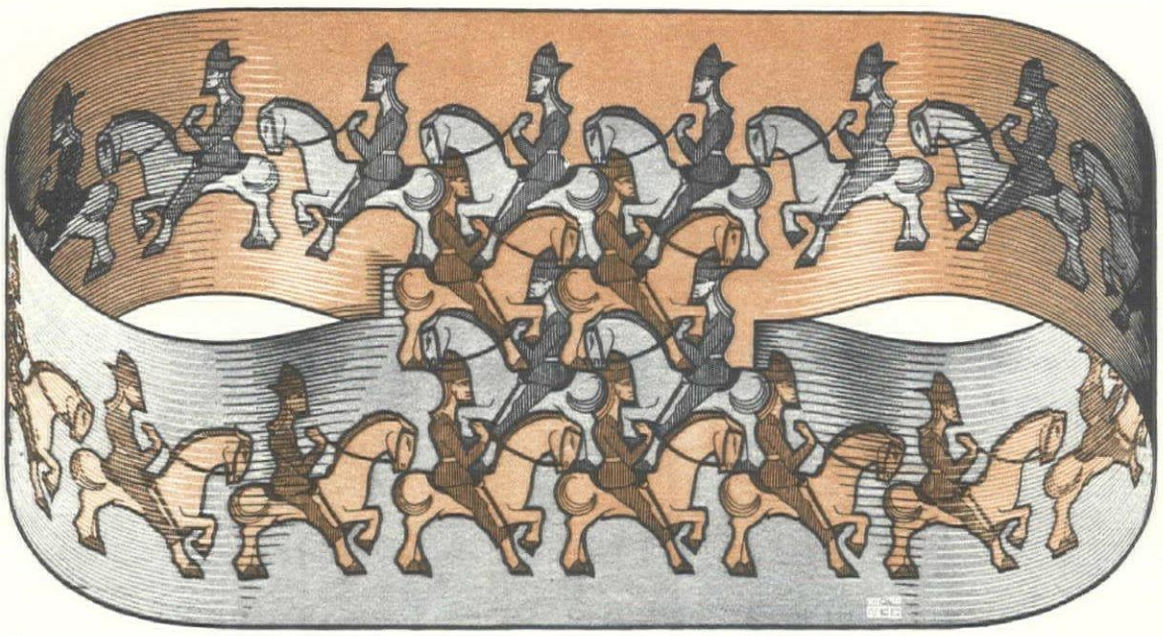
Maurits Cornelis Escher was born in Leeuwarden, Holland, in 1898. He learned the techniques of his craft in Haarlem, and then spent the next seventeen years perfecting them as he lived, successively, in Italy, Switzerland, and Belgium. In 1941 he went back to The Netherlands and settled in Baarn, outside Amsterdam, where he has lived ever since. Over the years he has been called on to design stamps, textiles, wood intarsia panels, murals, and even bank notes, but his real vocation has always been the making of prints. At first these were conventional, technically accomplished, more or less true-to-life renderings of landscape and architecture. But beginning in 1937, or thereabouts, he started to concentrate on the pictorial translation of personal ideas—often of "mental images which only become understandable to others on being translated into visual images," or—as he has also said —"of what we can 'see' with the inner eye."

The result was a series of wonderfully inventive prints which prompted the American poet Howard Nemerov to write: "carrying to strict logical extremes what geometry tells us about the relations of solids in space, he produces mystery, absurdity, and sometimes terror." Since 1961 he has made only one new print a year, although his entire production totals more than eighty. They are much prized by mathematicians and scientists, a fact which might give pause to the layman. But one need not know the underlying mathematical principles to enjoy the final image —for, as Escher says, "All my works are games. Serious games."

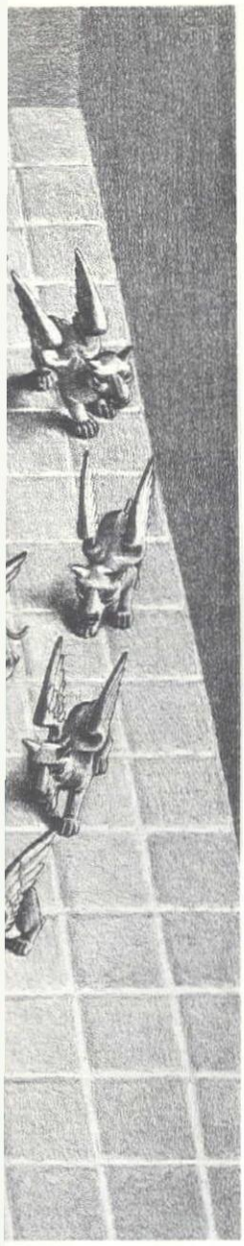
land with Reflecting Globe, lithograph, 1935



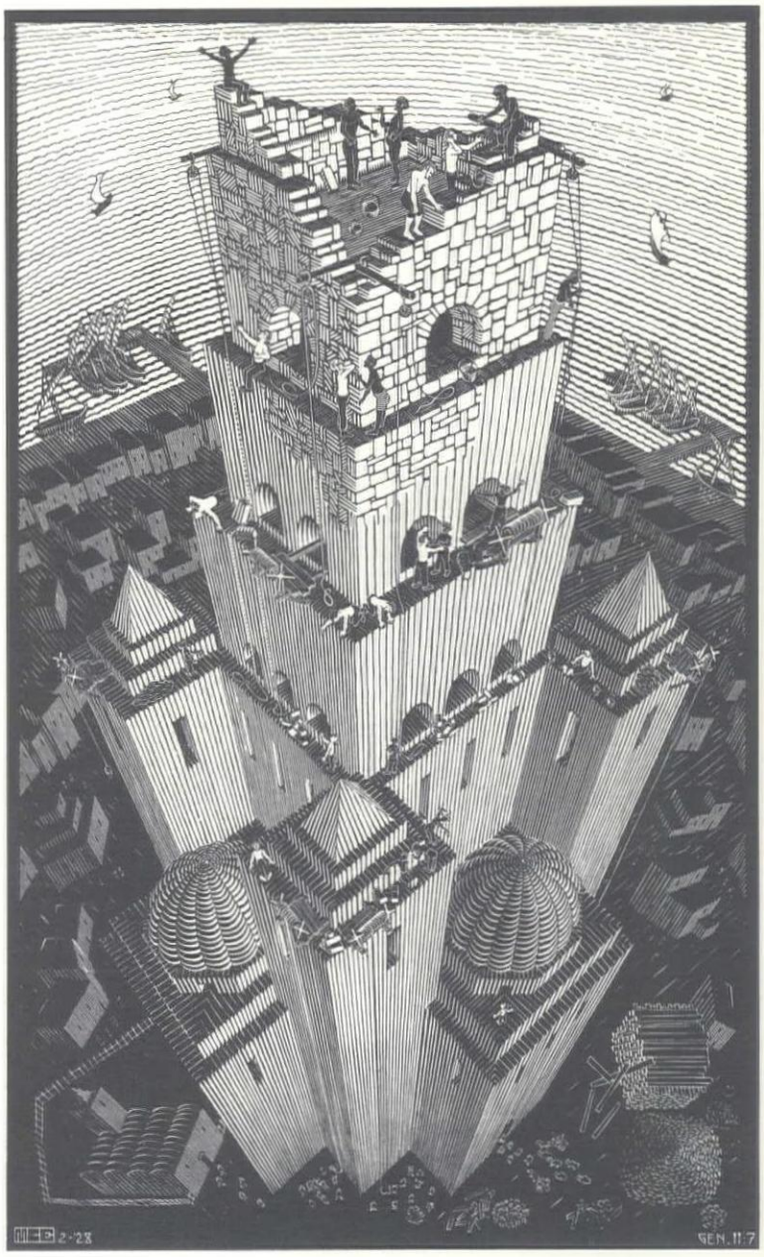
Magic Mirror, lithograph, 1946



Horseman, woodcut, three blocks, 1946



In the fanciful *Magic Mirror* (left), little griffins emerge from a looking glass, run around a ball to the right, and—as they flatten out to two dimensions—arrange themselves in an interlocking pattern on the floor. At the same time the mirror images are passing through the glass and coming to life, for a time, behind it. The idea of interlocking figures, or of identical positive and negative spaces, is carried even further in *Horseman* (opposite, below). This should be looked at as a woven ribbon, in which the colors of one side are reversed on the other. At the center, the brown and blue riders meet and fit together as perfectly as the pieces of a jigsaw puzzle. *The Tower of Babel* (right) is an early and relatively simple experiment in perspective. To suggest great height, all the verticals are drawn to a vanishing point in the nadir. Escher depicts the moment when the confusion of tongues came on the builders, halting the ambitious project forever.

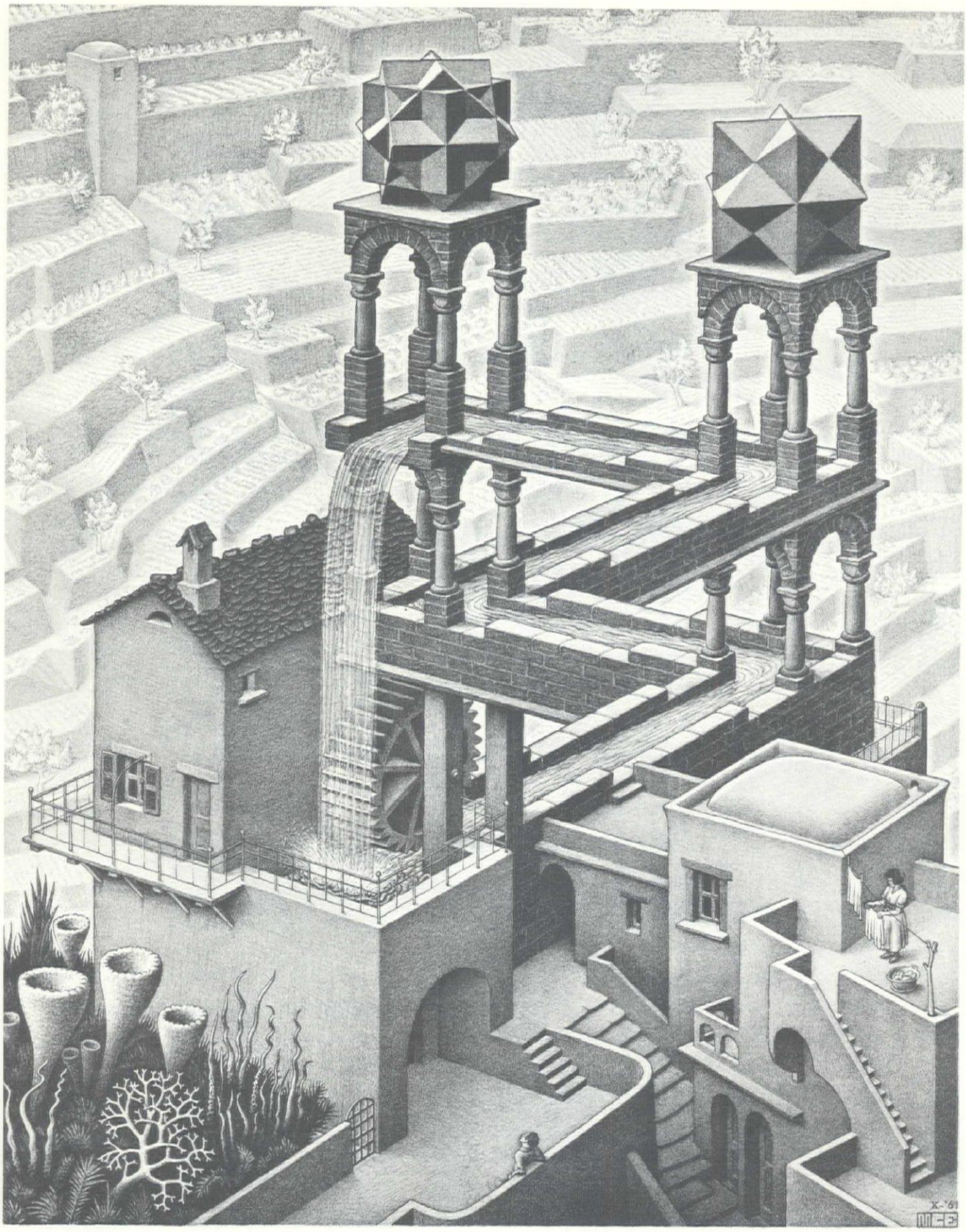


Tower of Babel, woodcut, 1928



Three Intersecting Planes, woodcut, two blocks, 1954

The intricate exercise in perspective at the left consists of three planes, each beginning along one side of the triangle and disappearing to a vanishing point in the angle opposite. This can be seen more readily if the figure is turned around and viewed successively from each of the three sides. The planes are made up of square tiles arranged in checkerboard fashion, with open spaces between them. One set of tiles is striped, a second set is black, and the third is white. The open spaces are brown.



Waterfall, lithograph, 1961

The mill above, where water flows uphill and perpetual motion is a reality, is an example of Escher's uncanny ability to fool the eye. Its secret is that it is based on an impossible triangle.

Equally baffling is the ornate lookout opposite, but here the artist has left a clue in the drawing on the floor and in the impossible construction being studied by the boy on the bench.

Belvedere, lithograph, 19



MICKELSON GALLERY, WASHINGTON, D.C.

The Hamadryad of Ragweed

By ED FISHER



In Ancient Greece, beside the Wine-
Dark Sea, 'twixt earth and ether,
A race of beings, not divine
But not quite human, either,
Inhabited the smiling land
In paralyzing numbers—
In every stream, in every stand
Of oaks, or of cucumbers;

From lowest reed bed by the sea
To loftiest Hymettus
They dwelt in every bush and tree
And every head of lettuce.
No scribe could tally up their ranks,
Nor bold amanuensis
(It would have flooded memory banks
And overwhelmed the census).

Delightful female forms had they
And lovely names like "Aegle"
And "Lotis," "Lara," "Dryope;"
And sometimes they were vaguely
Perceived by furtive mortal eye
—A dazzling sight to pitch on
Of perfect bosom, gleaming thigh,
Unhampered by a stitch on.

No wonder, then, the groves of Greece
Were full of would-be voyeurs
And Kings were robbed of mental peace
While Queens consulted lawyers;
The Gods themselves were not averse
To dallying with these Naiads
Though Goddesses would weep and curse
And mutter jeremiads.



Nor were the Nymphs and Naiads loath
Nor overly retiring;
Their job of fostering the growth
Of plants was uninspiring;
They found it hard to be demure,
To stick to girlish chatter
Or to delight in what was pure-
Ly vegetable matter.

So, now and then, from every stem,
Or pool, or branch arboreal
A lovely figure would emerge,
Aquiver and corporeal;
A blush or two, a soft "yoo-hoo"
—A male would catch a sight of her;
A "view halloo!" a hot pursue,
And then he'd make a night of her.

The forests rang with constant cry
Of men and Gods and Satyrs;
While from their beds amid the rye,
The tulips and the taters,
The Dryads rose, took shape, displayed
Their succulent totality—
No Self-denying Ordinance stayed
Their consummate carnality.

The Nymphs of Oak and Elm enjoyed
A string of peccadilloes,
The Ferns were constantly employed,
And so were all the Willows;
The Cowslips were a frequent catch
In countless lustful gambols;
Despite a tendency to scratch
So was the Nymph of Brambles . . .

Alone amid this lightsome set
One lovely creature languished
With downcast cheek and eyelids wet,
Emitting murmurs anguished;
Untouched, unbroached; for her the joys
Of love remained untasted;
Though oft approached by men and boys
Their efforts were quite wasted,

DRAWINGS BY THE AUTHOR



For from her lips and nostrils proud
And from her hair's gold glory
There swirled an irritating cloud
Of tiny *microsporae*
That cast the most appalling spell
On all would-be attackers:
That made them cough and itch and swell
And sneeze like firecrackers.

Thus wracked, no lover could begin
(Though she submitted docilely);
They'd try, with flaming eye and skin,
"Kerchoo-ing" most colossally,
To make a pass, embrace, or pet,
To rise above distraction
—But neither lass nor lad could get
A moment's satisfaction!

No hardy hero of the Greeks
(Accomplished womanizers,
To whom a maiden's kicks and shrieks
Were merely appetizers)
Could face resistance such as *this*
So shameful and so baffling,
Could boldly grasp or blithely kiss
While sniffling and snaffling!



And though from far and near they came
Determined on a try at
Her scatheless virtue, none could claim
The Ragweed Hamadryad.
Brave Spartans, hardy men of Thrace,
And wily Trapezuntites
All fled her pollen-flushed embrace
With volleys of "*Gesundheits!*"

Even the thirsting Gods above
Could only heave a sigh at
The unpossessed attractions of
The Ragweed Hamadryad:
Priapus raged and Bacchus wept
And Comus was no calmer;
Despite these fits they primly kept
A healthy distance from her.

At last, one day, great Zeus looked down
And found her figure pleasing;
With knowing smile and tucked-up gown,
His bolt and scepter seizing,
He stepped to earth; they met; they clasped;
In raptures paroxysmic
They tossed like ocean vessels grasped
By forces cataclysmic.

The heavens blazed as, wildly, crazed,
They spent their passion hoarded
While passing strangers stopped, amazed,
And recklessly applauded;
And when at last she cried "enough"
He rose up, enigmatic,
And promptly vanished in a puff
Of multicolored static.

This Mightiest of Scamps had done
What legions had attempted;
From ragweed pollen he, alone,
Seemed totally exempted.
With greatest ease he'd won the prize,
This courier annointed,
Nor cough, nor sneeze, nor red-of-eyes
Had stayed his rounds appointed.

And all the Greeks with paeans praised
His feat apocalyptic
But when the *how* of it was raised
Great Zeus's smile was cryptic;
He kept his questioners at bay
And kept his reputation.
In truth, his only secret lay
In Careful Preparation:

—This Romeo, before the show
And well behind the scenes
Had smeared himself from head to toe
With antihistamines
And thus protected had attained
His triumph transcendental
But to the public he explained:
"All allergies are mental."

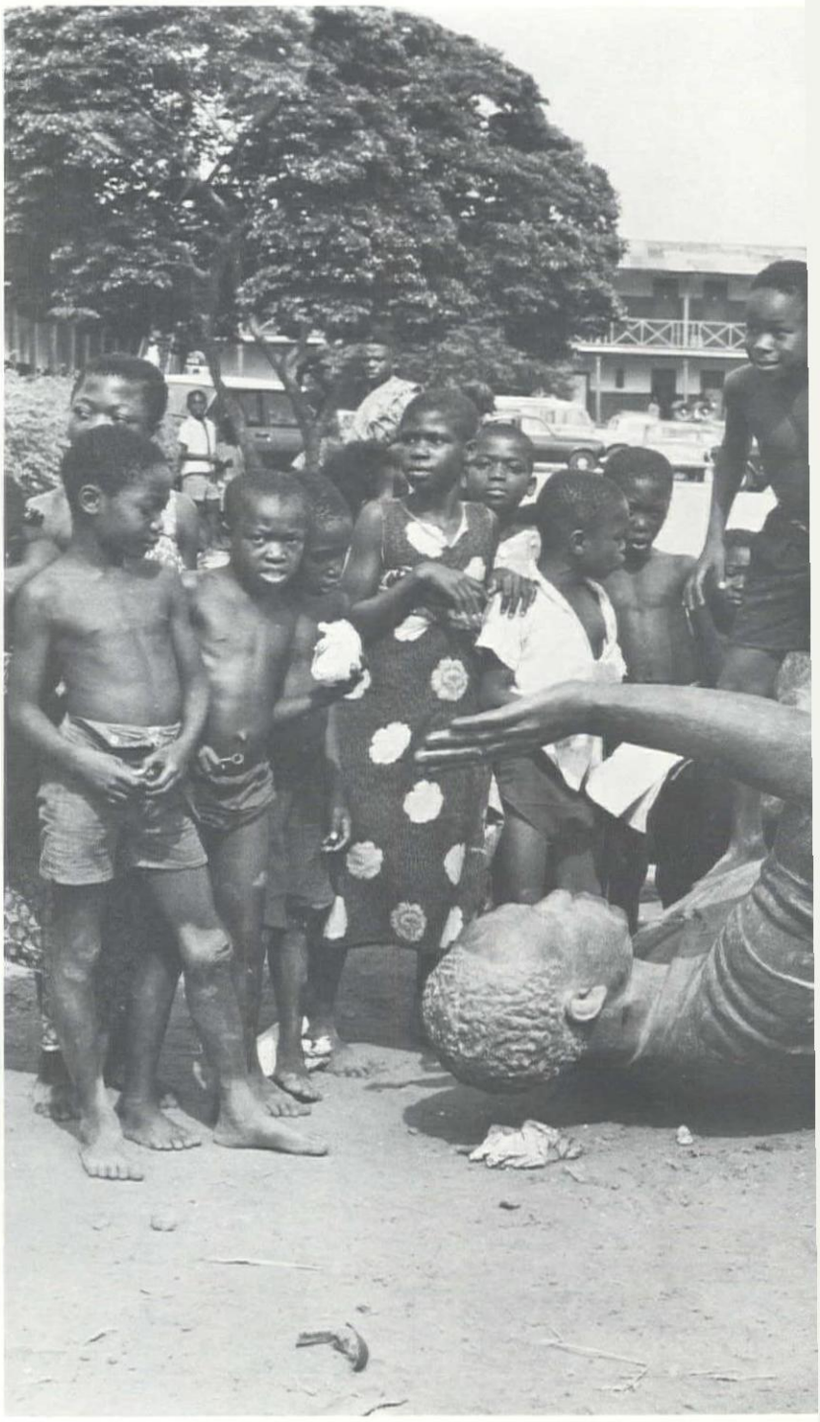


You can always get a crowd to help unveil a statue—and a bigg one to pull it down. Humanity likes to break things, to sneer the great and once-great, to cock a snook. We did it to George in New York (left) in 1776. Since then scenes like this have be repeated countless times in other emerging nations. Indeed, g ting rid of old statuary seems to be an important part of t process of emerging. The Algerians have dismantled or destroy most of the monuments erected to the Frenchmen who conquer and administered the country. Some have even been repatriat to France, for if Algerians need no reminders of French glo the French themselves do. At Khartoum, in the Sudan, a stat

FALLEN IDOLS

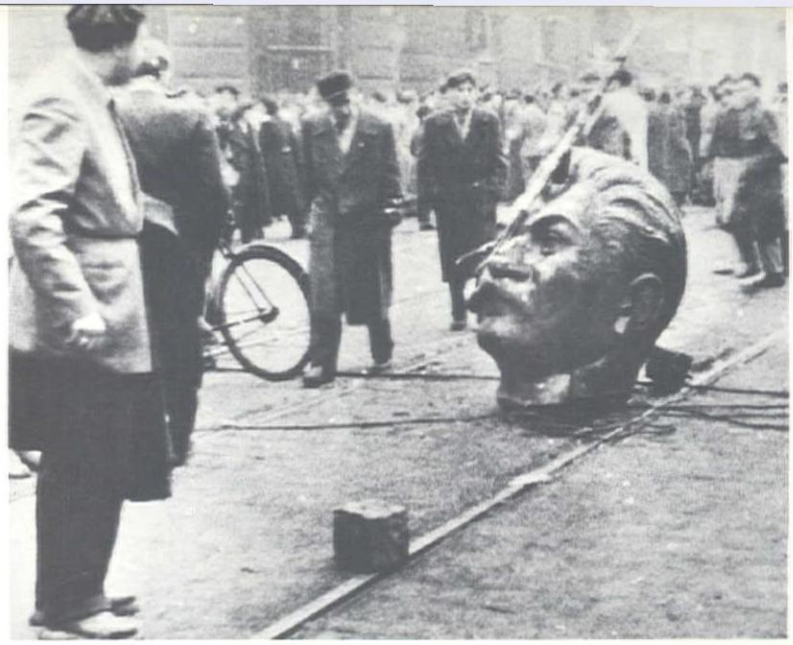


Two French statues removed from public view in Algiers



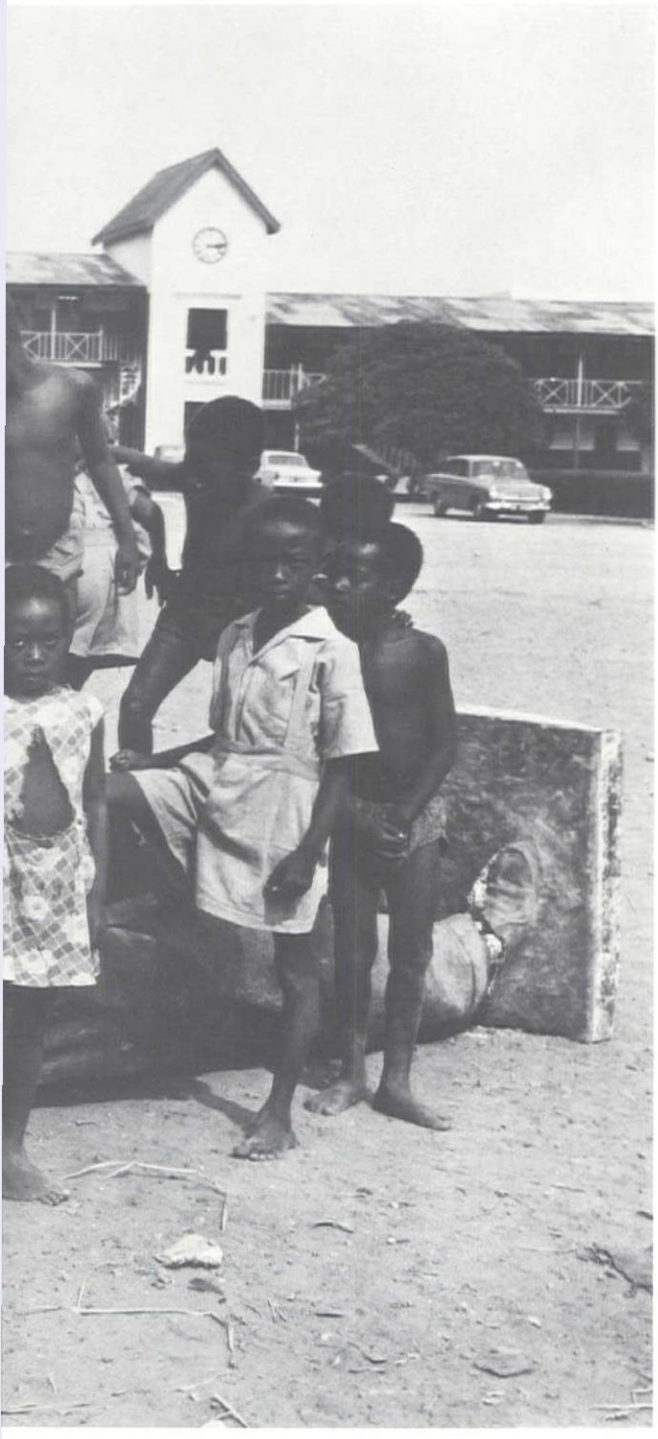
A toppled statue of Kwame Nkrumah, Ghana's "Father-Founder,"

f Lord Kitchener, symbolic of British rule, was recently retired vith full ceremonial honors; his shrouded monument is seen in ne bottom picture at the right. In 1956 citizens of Budapest de- ided to get rid of a statue of Joseph Stalin with less ceremony. ts decapitated head (right) lies in a city street, adorned with a raffic sign. Sometimes even the innocent suffer. Lord Nelson, vho never had anything to do with the subjection of Ireland, was ecently dynamited from atop a 134-foot column in the center of Dublin in honor of the fiftieth anniversary of the Easter Rebel- on of 1916. It is always a lot easier if Lord Nelson or Lord Kitchener (or even Comrade Stalin) isn't around at the time.



UPI

Above, Stalin's head; below, Lord Nelson's head



UPI

used as a playground by some of the father-founder's children



WIDE WORLD



Lord Kitchener under wraps in Khartoum

A Tale of Two Urban Areas

OR

It isn't raining rain, you know—it's just a little violet-type precipitation activity

By CALVIN S. BROWN

Listening to the announcers of broadcast football games last year, I got the impression that something strange had happened to the game. The fourth down seemed to have disappeared. As the announcers told the story, there were plenty of fourth-down *situations*, but never an actual fourth down.

I soon realized, of course, that it was not the game that had changed, but the language. The announcers were merely falling in line with the latest big trend in English. It can be accurately described in what may someday become a rule of English grammar: use the noun that you really mean as an adjective, and let this adjective then modify some empty or redundant noun.

In the language of journalists, educationists, bureaucrats, and pompous speakers and writers generally, this rule is already in effect. Not only have city and country been entirely replaced by urban *areas* and rural *areas*, but the urban *areas* contain slum *areas*, the rural *areas* contain wooded *areas*, and the parks in both have become recreational *areas*. The weatherman predicts thundershower *activity*, and not long ago I heard him reporting heavy rainfall *amounts* in (of course) local *areas*.

Such expressions have become so standard that they are hardly noticed, but they are insufficient for the more creative writers. For example, "an intermediate French textbook combining verbal *symbols* and visual *representations*"—which I take to be words and pictures. But the prize must go to the sports writer who reported that "as the Tech coach says, improvement should set in with each new game-type *adventure*."

These redundant nouns have always existed, and they arise historically when a speaker uses one word to help define another. Thus Americans, brought up in a prohibition-and-hard-liquor tradition without benefit of wines, often speak of sherry *wine*, whereas to the British sherry is sherry. But my finest specimen of a combination of emptiness and redundancy in the noun is a newspaper report about a man who was resting comfortably after undergoing leg-amputation *surgery*.

Why should current English have developed these tricks? One can readily see why the radio and television announcers use them. These men have a clear-cut task —to fill so many minutes with verbiage, whether they have anything to say or not. The amusing thing is that they become so addicted to the ready-made and roundabout expressions that even when they are actually pressed for time, they go on using padded language but speak it faster. It is as if a man packing something in a box *had* to use all the excelsior available.

Most writers and speakers, however, do not have the announcer's excuse. They are simply pompous, and in their minds, the more and bigger the words, the more impressive the statement will be. They *utilize* instead of *use*, and *donate* instead of *give*—and even, in advanced cases, *verbalize* instead of *talk*. Since such expressions are impressive (if at all) by being out of the ordinary, once they become ordinary their point is lost, and those who use them come to consider them as normal English and the simpler words as somehow substandard. I recently heard a weather broadcaster inadvertently say "rain" and then correct it to "precipitation *activity*."

Since most people are usually out to impress, the only thing that could reverse the trend would be for the empty noun to become so standard and commonplace that the simple expression would, by contrast, become impressive. But human nature being what it is, there is no reason to believe that this will ever happen.

If, then, the trend toward the use of empty nouns continues, where is it going to lead?

Many languages have words which grammarians call "classifiers"—words which *must* be used to put every specific noun into some general class, such as "three *head* of cattle" instead of "three cows." Perhaps we are on the verge of such a development in English. I once asked an educationist why he insisted on saying "the education process," and he condescendingly explained that education *is* a process. By the same impeccable logic, I suppose I really should call the pen I am writing with a *pen object*. If we ever reach that point, the basic structure of English will have changed.

Meanwhile, there are other, even more fascinating possibilities. For example, if the adjective plus its empty noun becomes the standard formula, then it will be possible to make the whole thing into an adjective expression modifying a new and even emptier noun. In fact, this is already being done. The schools, for instance, never taught driving, but only driver *education*; now one hears of programs for teaching driver education *skills*. Once you double the padding, the possibilities become literally infinite. If two empty nouns can be used, why not three, or five, or seventeen?

Or why any?

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