Ancient stoneworks found in Loch Ness

Scientists searching for the Loch Ness monster have stumbled upon several large, prehistoric manmade stoneworks submerged in the Loch. The structures include a stone wall, several ancient mounds (locally called cairns) and possibly an ancient fortified island (called a crannog). Though such cairns and crannogs are common in the area, the discovery of such structures some 30 feet below the Loch's surface indicates the water level has risen sharply over the centuries. Also, since most cairns have long since been pillaged of whatever remains they might have contained, the discovery of several apparently intact structures may allow archaeologists to learn more about the area's ancient inhabitants.

The cairns are made of piled stones, varying in size from nearly one foot diameter down to pebbles. Such structures were presumably built as burial and religious mounds three or four thousand years ago. The mounds are generally laid out in series of concentric circles, as much as 100 feet in diameter, but one complex series stretches 250 feet (see photo).

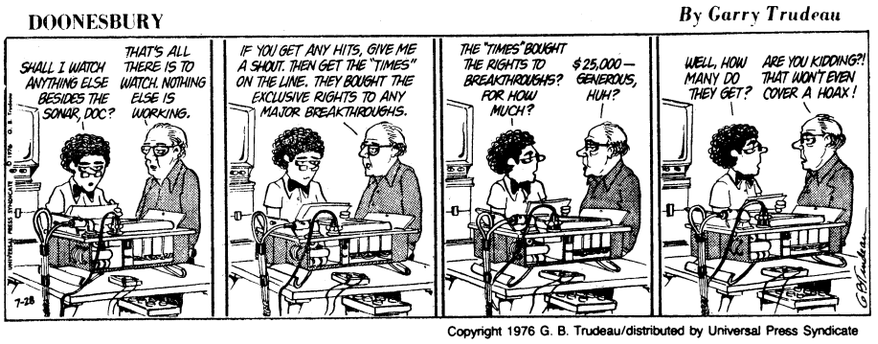
The discovery was made by Martin Klein and Charles Finkelstein of Klein Associates, Inc., the underwater search and survey company that has been developing a sonar profile of the Loch floor to aid in searching for "Nessie." Harold E. Edgerton, an Institute Professor Emeritus at MIT who is one of the leaders of the search, told SCIENCE NEWS that discovery of the sunken stoneworks may become "a big project in itself" and "may be more important than the biology, depending on one's interests."

Meanwhile, the rest of the monster search has been plagued by problems ranging from a malfunctioning videotape recorder to an unusually delayed influx of salmon, which were counted on to attract Nessie into shallow water. More sonar contacts have been made with large swimming objects, but all in deep water, outside the range of cameras. Also discovered by sonar was a large object at 350 feet depth that Klein says may be a carcass or animal, but closer examination will be necessary to verify.

Klein Associates, Inc. and The Academy of Applied Science

"Kleinhenge"—sonar trace of manmade stone piles found in Loch Ness. Distance between vertical lines is 15 meters.

Ironically, the most interesting recent reporting on the continuing search has come from Doonesbury cartoonist Garry Trudeau, who went to Scotland and returned with a droll account of the project misadventures (see example above). The New York Times secured exclusive rights to first coverage of any discoveries (SN: 6/12/76, p. 359) and offered a flurry of early reports. The archaeological discoveries, however, received only passing mention in the Times and even Trudeau was reportedly hassled by a Timesman when he approached the research boat. □



XYY: No link to aggressive crime

Two old scientific notions concerning extra Y chromosomes in human males touched off storms of debate that have yet to subside. One is that an extra Y might predispose males to aggressive or antisocial behavior, and the other is that XYY individuals should be monitored from birth for signs of such behavior. A new study, perhaps the most definitive thus far, turns thumbs down on both issues.

Major design flaws in previous studies and gaps in essential information led a large team of Danish and American researchers to plan a more definitive study of the XYY question. The 12-member team, which reports its findings in the August 13 SCIENCE, includes Herman A. Witkin and Donald R. Goodenough, heading a group at the Educational Testing Service in Princeton, N.J., and Sarnoff A. Mednick and Fini Schulsinger, leading a separate group at the Psychological Institute at Copenhagen's Municipal Hospital.

The team carried out a comprehensive study on more than 30,000 men born in Copenhagen between 1944 and 1947. They studied Danish men because of the extensive social records kept in Denmark, and because, due to emigration trends, most of the target subjects still lived in Copenhagen and could be located.

It was already evident from other studies that XYY's tend to be very tall, so the team decided to look for extra sex chromosomes only in the tallest 15 percent (more than six feet tall) of the Danish male subpopulation. After weeding out those who had left the city and those who had died, a sample of 4,558 tall subjects remained. Sex chromosome determinations were made on most of them, and from these tests, the team was able to establish a base rate of 2.9 XYY's per 1,000 tall males. They also established that 3.9 per 1,000 have an extra X chromosome.

The team did dozens of complicated cross-tabulations on data from XYY's, XXY's and normal XY's. The data included criminality rates, intelligence test scores, educational levels, parental socioeconomic statuses and heights. This cross-checking was to test three hypotheses: 1) that XYY's tend to be aggressive in nature and commit more aggressive crimes; 2) that an extra Y chromosome might be related to intellectual dysfunction and might be an intervening variable in crime, and 3) that height may add to aggression and to suspicion of crime.

They found that XYY's do have a significantly higher rate of conviction for crimes than XY's or XXY's, but that these crimes were not, in general, acts of aggression. They also have lower intelligence scores and educational levels.

The team ruled out both height and increased aggression as causes of the criminality. But the data did support the hypothesis that, as with normal XY's, lower intelligence and educational levels in XYY's are linked to increased criminality. The finding does not imply, they state, that intelligence is somehow controlled by the Y chromosome, since genes and chromosomes act in concert to influence human development. The findings may mean instead, that an extra Y causes a lag in development leading to lowered intelligence.

Regarding the issue of prescreening and monitoring children for sex chromosome abnormalities, the team takes a strong position. No evidence was found, they state, that aggression is linked to either extra X or Y chromosomes, and thus early identification would not "tend to ameliorate" the problem of antisocial behavior. □