NEW DELHI, Aug. 16—Senator Edward M. Kennedy today denounced Pakistan's military action against the East Pakistani separatists as genocide and said that the secret trial of the East Pakistani leader, Sheikh Mujibur Rahman, was "an outrage to every concept of international law."

At a news conference here as he ended his week-long visit to India, the Massachusetts Democrat blamed the Nixon Administration's policy of continued arms aid to Pakistan for the severe damage to United States relations with India.

Mr. Kennedy—who spent most of his time here visiting the squalid border camps that hold East Pakistani refugees, seven million of whom are said to have fled—said President Nixon's policy "baffles me—and after seeing the results in terms of human misery, I think it's an even greater disaster."

Discussing the 20-year Soviet-Indian friendship treaty signed here a week ago, the Senator said he saw nothing inconsistent with India's stated policy of nonalignment and did not think it was "in any way disadvantageous to U.S. friendship with India."

As a matter of fact, he added, the Indian Foreign Minister, Swaran Singh, had indicated that he was willing to sign a similar treaty with the United States.

He Has No Solution to Offer

The Soviet-Indian treaty, whose immediate aim is to discourage Pakistan from declaring war on India, which she has threatened, provides that if the Soviet Union or India is attacked or threatened, the two countries shall hold "consultations to remove such threat and to take appropriate effective measures to insure peace and the security of their countries."

Senator Kennedy, who came to India in his capacity as chairman of the Senate Judiciary subcommittee on refugees, said he believed that a political solution to the East Pakistan crisis was possible but that he did not pretend to have it.

The crisis erupted on March 25, when the Pakistani army, composed of West Pakistanis, launched a surprise offensive to try to crush the Bengali independence movement in East Pakistan. Diplomatic observers estimate that the army has killed at least 200,000 Bengalis. Frightened refugees continue to pour into India by the thousands.

The Bengali insurgents, "with the help of Indian arms, training and sanctuary," have increased their guerrilla activities, causing a significant number of army casualties.

President Agha Mohammad Yahya Khan of Pakistan has repeatedly warned that if India continues to help the guerrillas, he will declare war.

The Senator seemed uneasy only when pressed by Indian newsmen for his idea of a political solution. The official view here is that the only solution is independence for East Pakistan under Sheikh Mujib, who faces the death penalty.

"The only crime that Mujib is guilty of," the Senator said, "is winning an election."

Mr. Kennedy had planned to visit both East and West Pakistan and had obtained a Pakistani visa, but when he arrived in India last Tuesday, the Pakistani Government canceled his visit, saying that it would serve no useful purpose because "the partisan statements he made on arrival in India showed how deeply he imbued Indian propaganda."

Describing the financial burden of the refugees on India as overwhelming, he said: "I think it will be $500-million to $1-billion a year. Obviously, the international response has been meager to date. I'm pleased the United States has given more than all the aid put together from other nations, but compared to the magnitude of the burden, it's extremely inadequate."

When he gets home, he said, he will urge an end to economic aid to Pakistan "until a political solution has been realized."