photograph. Even if the structure pictured is a double helix as in the DNA molecule, "it is hardly earthshaking," Crewe said; "one would expect that."

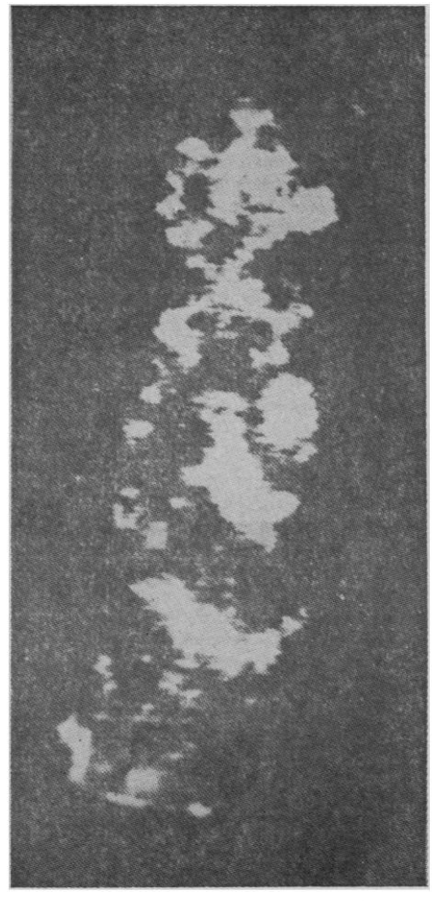
Crewe said that he had told Stroke on several occasions to attribute "no biological significance" to the photograph sent him to test his deblurring process. In his prepared statement Crewe said, "Dr. Stroke succeeded in sharpening the picture, although it is debatable whether any additional information has been provided." Crewe also did not accept the thesis stated in the Stony Brook press release that the deblurred photograph would benefit cancer study.

Photographs purporting to show the double helix of the DNA molecule have already been published, Crewe noted. The photographs were taken by Jack Griffith, now a postdoctoral fellow at the Stanford medical school, with the assistance of Professor James Bonner of Caltech. The photos were shown at a scientific meeting in Los Angeles in early 1969 and were published in various magazines, including *Time* and *Chemical and Engineering News*, Bonner said in a telephone interview.

"I don't understand how all this confusion could possibly have arisen," Crewe said.

How did the confusion arise? Was it due to overeager scientists or journalists? Or was it due to the carelessness of editors on a newspaper desk or of employees at a university information office? Or a combination of several of the above? Whatever the cause, it is a good warning for all parties to such stories to engage in meticulous checking before publicizing "sensational" research findings.

To Stroke, the Stony Brook scientist, it was the reporter's fault. In a telephone interview, Stroke said that the reporter "got carried away with the material." He later added that "it shows how scientists suffer from irresponsible journalists." Stroke said that he had told the reporter that the photograph was of a DNA-containing virus, not a DNA molecule itself, and that he was aware that there had been prior photographs of the DNA molecule. Stroke appealed to this writer not to picture the story as a dispute and pointed out that press stories, which were read by congressmen, were very important during this period of difficult funding for science. "I don't want to make a scandal out of it," Stroke said.



This reproduction of the photo which appeared in the 12 August *New York Times* is unfortunately somewhat "reblurred."

The reporter, David A. Andelman, is not a science reporter but, rather, is the *New York Times*' bureau chief for Long Island, where Stony Brook is located. Andelman said in his talks with Stroke that the Stony Brook scientist had said that the photograph was of a virus containing DNA. He said that Stroke had indicated to him that his photograph was one of a DNA double helix and that "he didn't make clear that it was not a DNA molecule." Andelman also attributed part of the confusion to a misreading of a press release to him over the telephone by an employee of the Stony Brook university relations office.

The policy at the Stony Brook office is to have professors check over releases describing their research. Stroke said in the telephone interview that he had checked over the press release issued on 14 April by Stony Brook describing his finding. The lead sentence of the release states that Stroke "has for the first time deblurred a photograph of a virus to reveal its true shape, in this case the same double-helical shape as the fundamental DNA molecule." The third sentence of the release states "It is, he (Stroke) said, the first time the double-helical structure has been revealed by means of an actual photograph, though James D. Watson, in his Nobel-prize-winning work on genetics, predicted that to be the shape of the DNA molecule." This sentence seems incorrect, if one accepts the validity of the Griffith photographs announced in 1969.

Walter Sullivan, respected dean of the *New York Times*' science writers, said that he had not remembered the Griffith photographs and that a reproduction of them had not appeared in a search through the *New York Times*' files, thus indicating that his newspaper had almost certainly not published them in 1969. Sullivan also noted that the newspaper had checked with James D. Watson on its original story and that Watson had not alerted the *Times* to the existence of earlier photographs of the DNA molecule.

What started out looking like one of the best scientific stories of the season ended up in confusion and retraction, causing embarrassment for all the illustrious professionals involved.

Perhaps an appropriate last word was said by John Langmore, a University of Chicago biophysicist who works with Crewe: "The proper place for initial publication of such material is in a refereed scientific journal. In this branch of electron microscopy, there is an unfortunate tendency for people to overstate their results."

—BRYCE NELSON

Bryce Nelson, a former member of the Science *news staff, is a roving national correspondent based in Chicago for the Los Angeles* Times.

APPOINTMENTS

Charles F. Denton, director, graduate program in political science, Wayne State University, to dean, School of Social Sciences, Fresno State College. . . . **Richard G. Griskey**, director of research, Newark College of Engineering, to dean, College of Applied Science and Engineering, University of Wisconsin, Milwaukee. . . . **Robert A. Duffy**, vice commander, USAF Space and Missile Systems Organization, El Segundo, Calif., to vice president, Charles Stark Draper Laboratory, M.I.T.